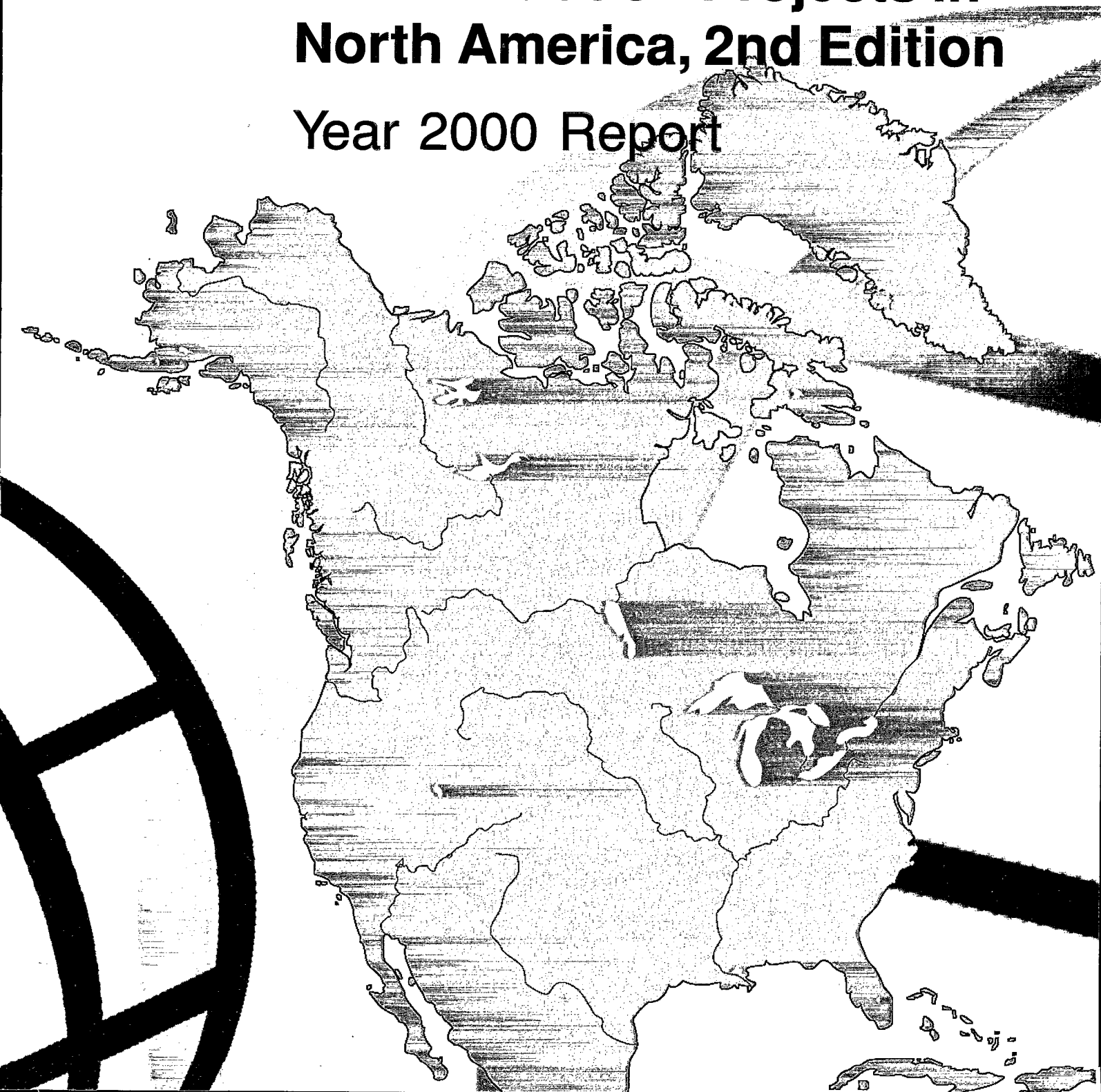
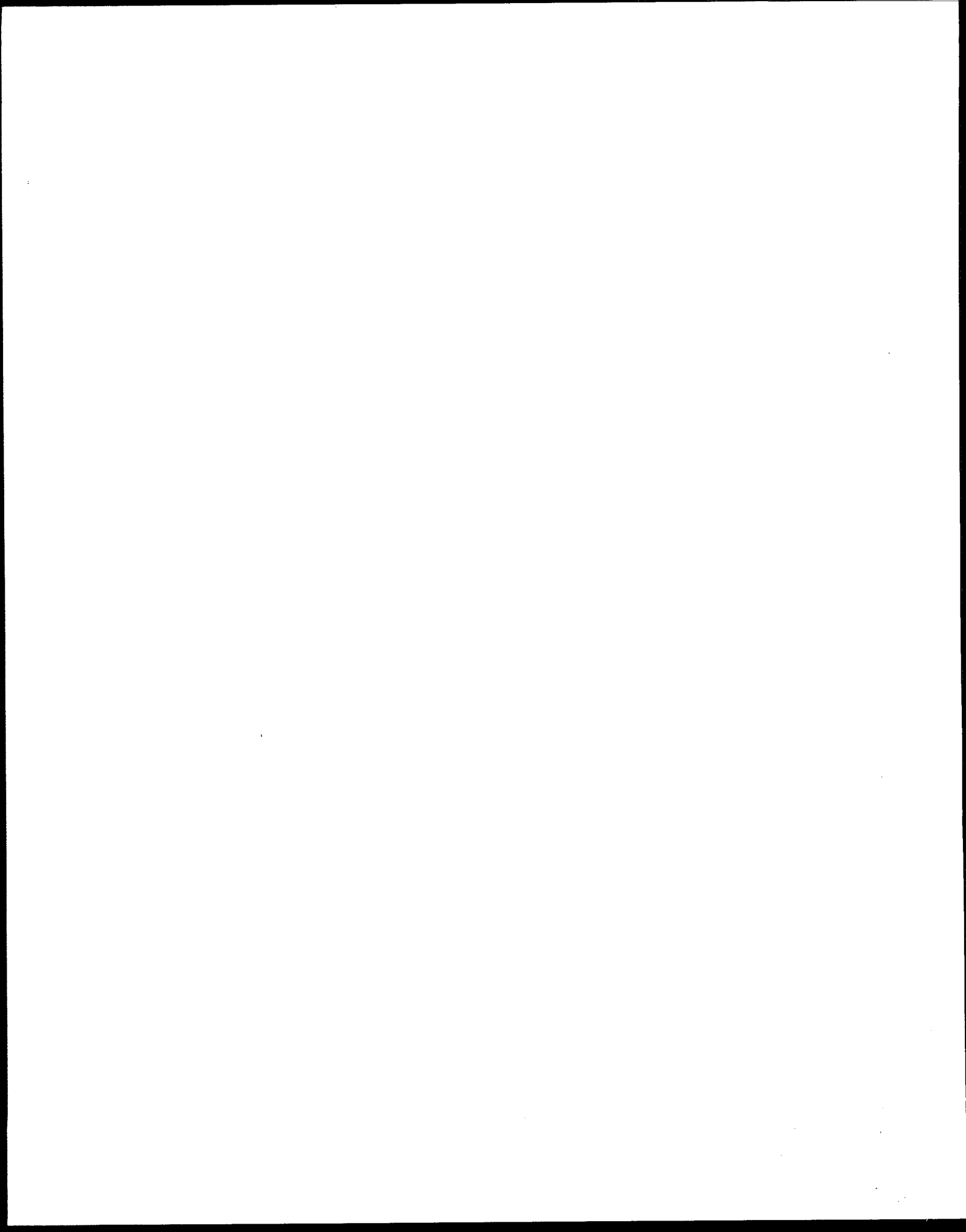




Innovative Remediation Technologies: Field-Scale Demonstration Projects in North America, 2nd Edition

Year 2000 Report





Notice

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TABLE OF CONTENTS

Introduction -----	1
Overview of Demonstration Projects -----	5
Matrix of Demonstration Projects -----	11
Using the Matrix -----	11
Soil, Sludge, and Sediment Projects -----	13
Ex Situ Biological Technologies -----	13
In Situ Biological Technologies -----	18
Ex Situ Physical/Chemical Technologies -----	30
In Situ Physical/Chemical Technologies -----	43
Ex Situ Thermal Technologies -----	61
In Situ Thermal Technologies -----	69
Off-Gas Treatment Technologies -----	79
Groundwater Projects -----	81
Ex Situ Biological Technologies -----	81
In Situ Biological Technologies -----	82
Ex Situ Physical/Chemical Technologies -----	93
In Situ Physical/Chemical Technologies -----	97
Appendix A: Innovative Remediation Technology Demonstration Programs	
Appendix B: Categorized Overview of Demonstration Projects	



INTRODUCTION

The development of new and innovative technologies and methods for treating environmental contaminants is a critical step in the effort to cleanup the nation's hazardous waste sites. Field demonstration of these technologies is, in turn, a key step in their development. The continuing investment of public and private resources in demonstration projects represents a major commitment to promoting the technical and cost advantages offered by these technologies to the engineering and regulatory sectors. Since the mid-1980's, the number of government-sponsored or supported field demonstrations of new waste cleanup technologies has grown to over six hundred.

The 600+ projects summarized in this document are both ongoing and completed field demonstrations sponsored by government agencies working in partnership with private technology developers to bring new technologies into the marketplace. Given the wide number of government sponsors and other partners that support these demonstrations, records and data are unfortunately spread over a large number of technical reports and other sources, making it difficult for environmental cleanup project managers and other professionals to locate this information. This report consolidates key reference information in a matrix that allows project managers to quickly identify new technologies that may answer their cleanup needs and contacts for obtaining technology demonstration results and other information.

Since the publication of the first edition of this report in 1996 (*Completed North American Innovative Remediation Technology Demonstration Projects* EPA 542-B-96-002), information on 342 projects have been added to the reference matrix that forms the core of this document, bringing the total number reported to 601 projects. The scope of reporting for this edition has been expanded to include information from on-going field demonstrations that are able to provide at least partial results. The overall scope remains restricted to field-scale projects. Emerging technology re-

search and laboratory-scale demonstration projects are not included. The intention is to provide information on technologies that are approaching commercial viability and may help remedial and corrective action project managers in dealing with near-term cleanup issues and decisions.

The increase in the number of demonstrations in this edition reflects expansion into new technology areas such as phytoremediation, permeable reactive barriers, and enhanced bioremediation. The focus on new and innovative technologies also is reflected in the drop-off over time in the number of projects addressing more established technologies that were once considered innovative, such as soil vapor extraction, and others. For example, the first edition did not report any field demonstrations for the three new areas listed above. By contrast, only six demonstrations of soil vapor extraction techniques were identified since the first edition.

The matrices of field demonstration projects in this report cover two media categories: soil, sludge, and sediment projects in the first matrix; groundwater projects in the second. Individual projects in each matrix are grouped into technology types (ex situ biological, in situ biological, ex situ physical/chemical, and in situ physical/chemical). The first matrix also breaks out ex situ and in situ thermal and off-gas treatment projects in the soil, sludge, and sediment group. Each matrix includes the following information for each project (as available):

Name of the technology or process
Type(s) of contaminant(s) treated
Technical comments
Description of the site or waste source
Demonstration date (year)

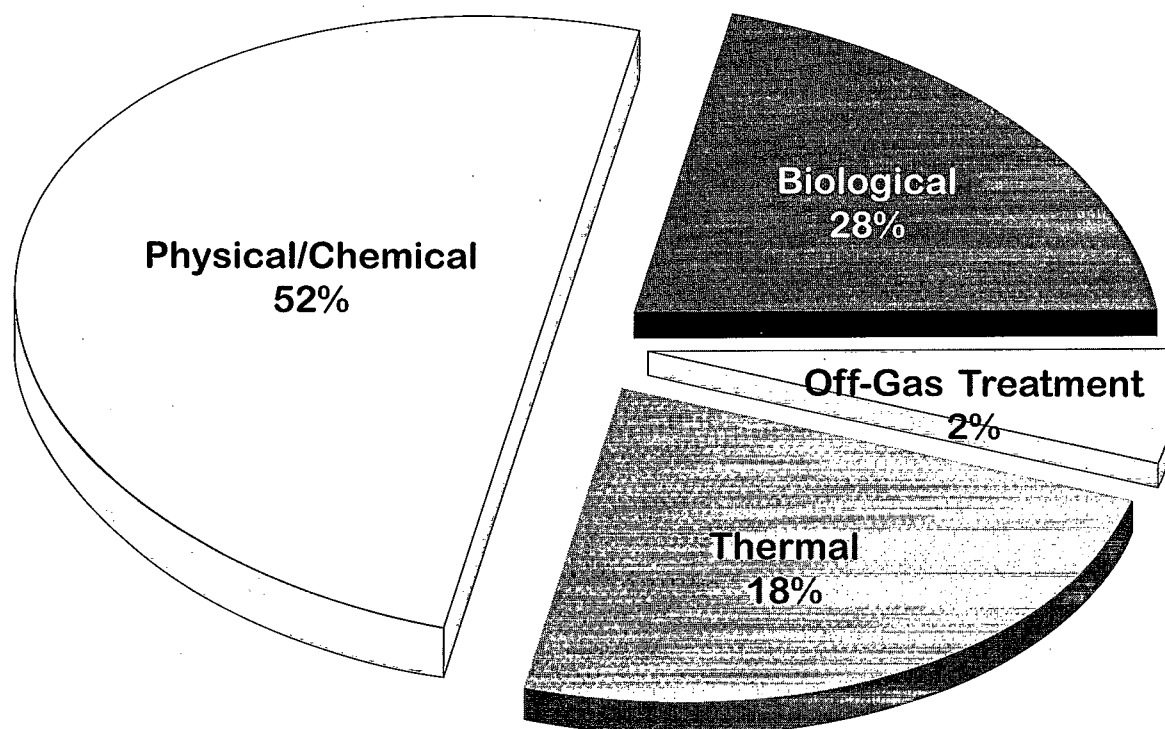
Project report title and reference information
Developer/vendor contact information
Government agency sponsor key
Inclusion in EPA REACH IT (yes/no)

An appendix to this edition provides further information on the major state and federal technology demonstration programs that sponsor the demonstrations listed in the matrix.

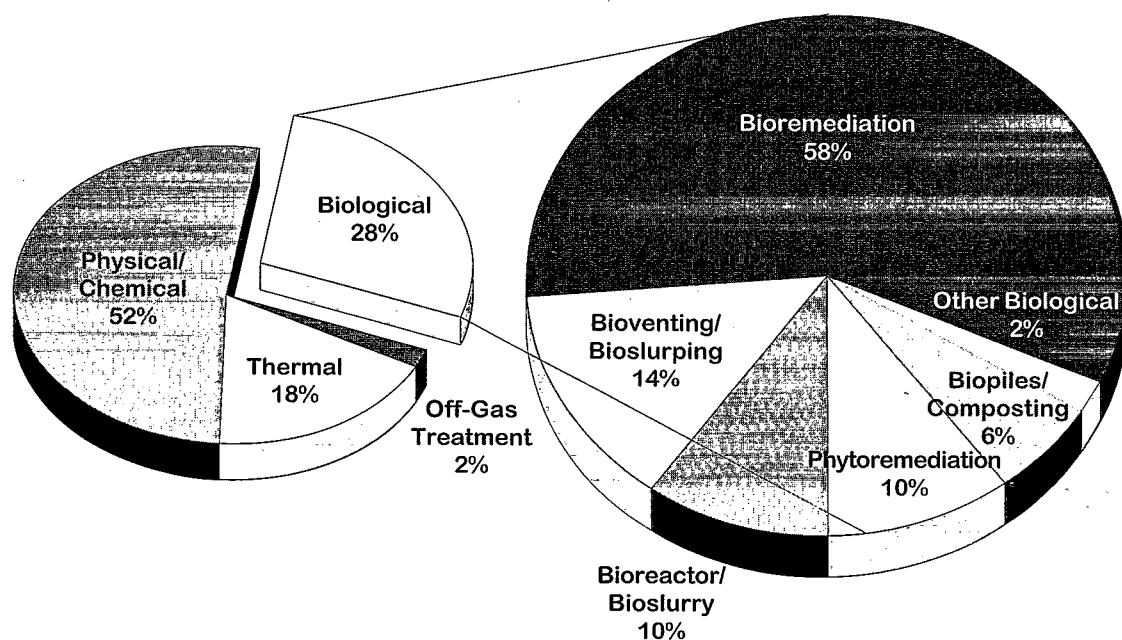


Overview of Demonstration Projects

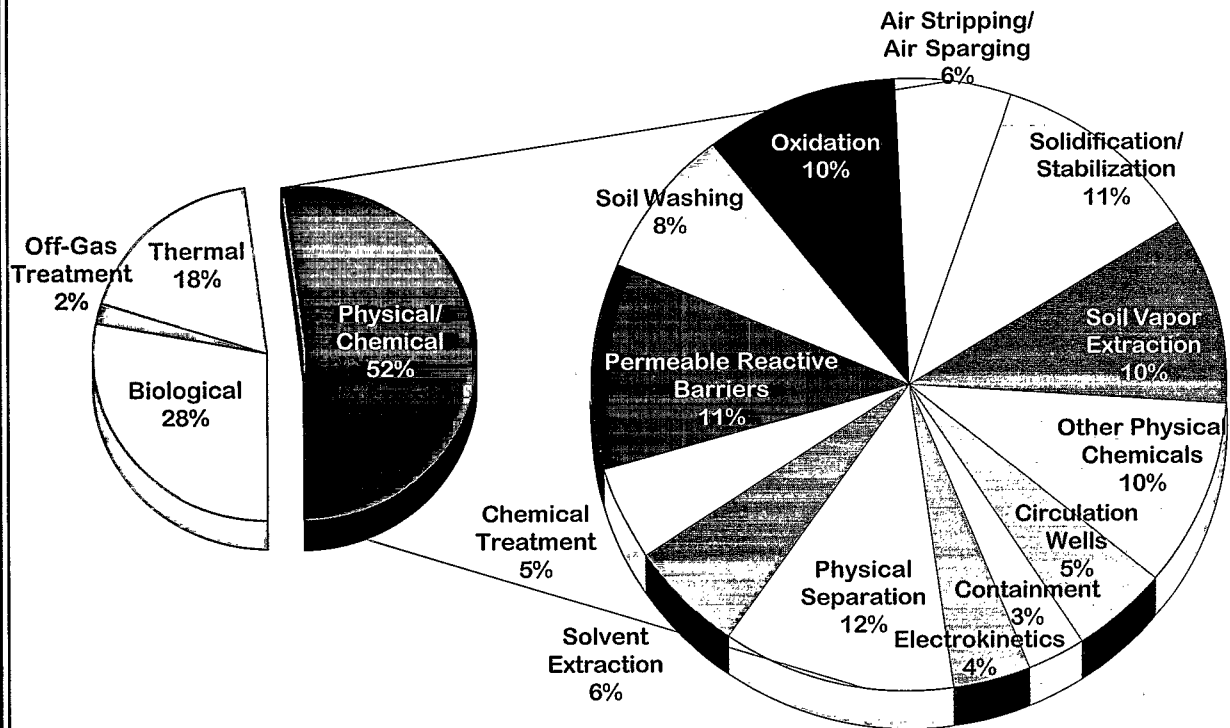
Overview of Demonstrations by Technology



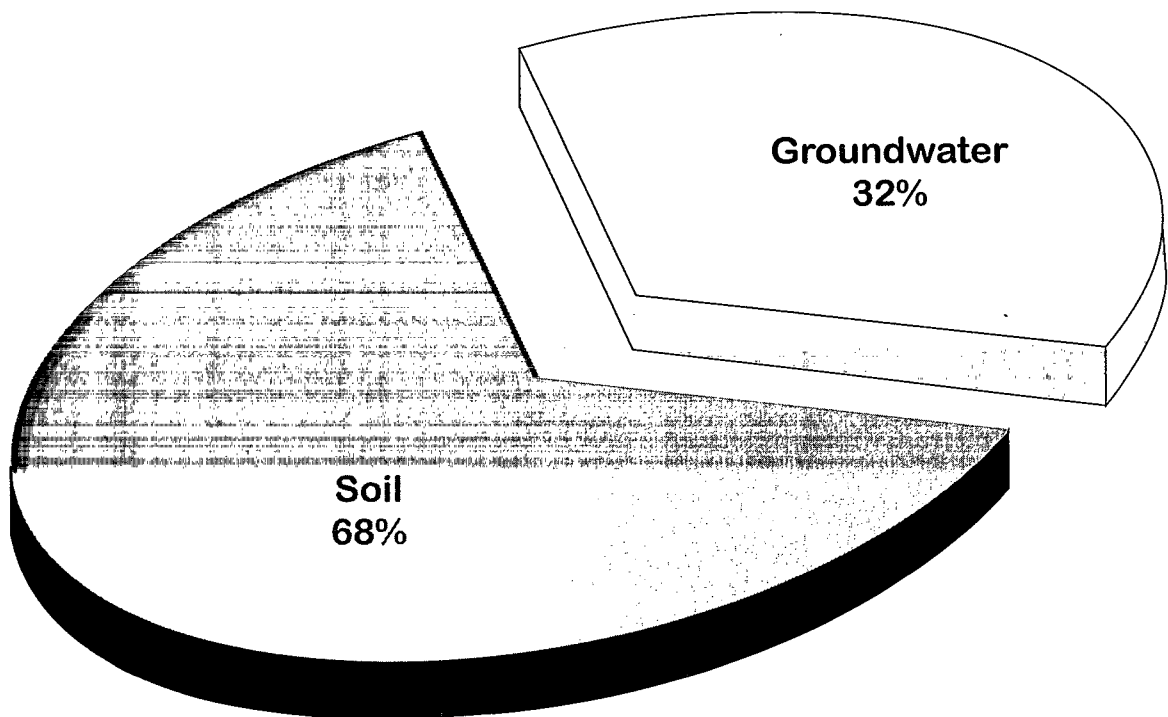
Overview of Demonstrations by Technology



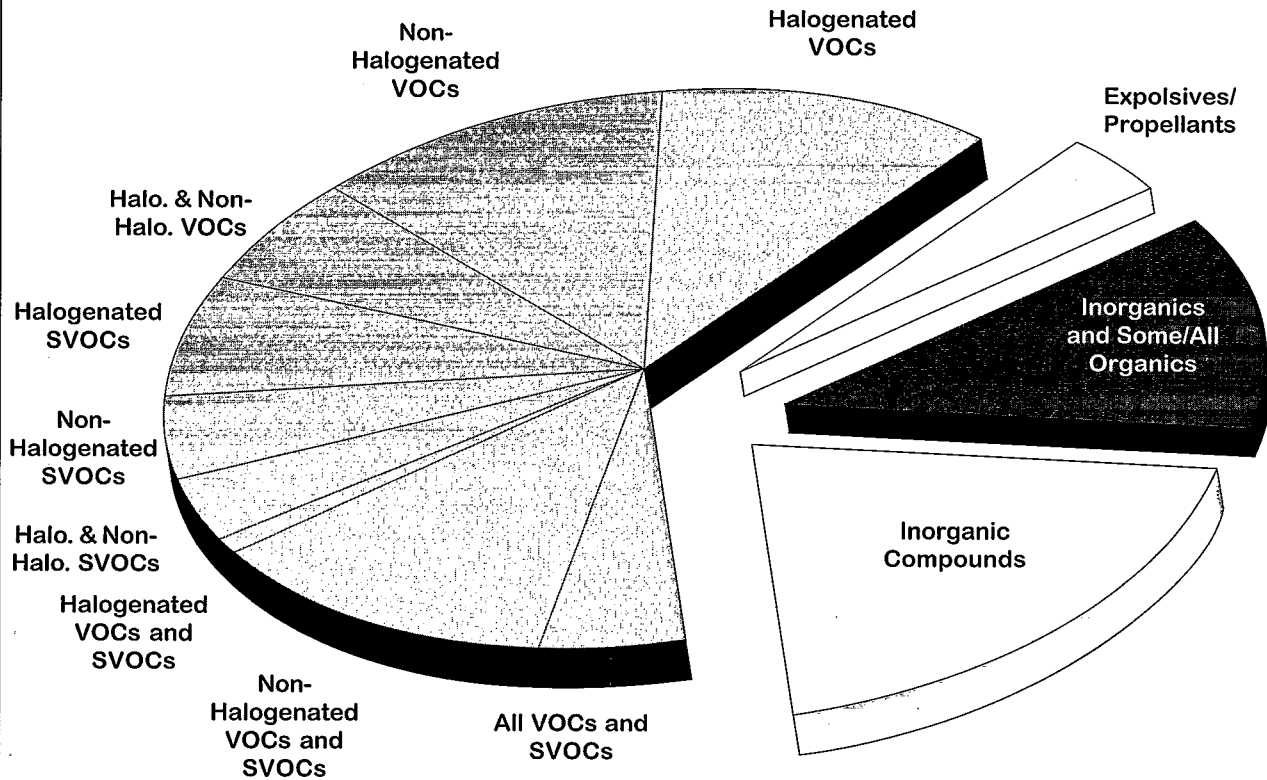
Overview of Demonstrations by Technology



Overview of Demonstrations by Media



Overview of Contaminants - All Projects





MATRIX OF FIELD-SCALE INNOVATIVE REMEDIATION TECHNOLOGY DEMONSTRATION PROJECTS

Using the Matrix

The following matrix summarizes information for 599 completed and on-going field-scale demonstration projects. The data in the matrix represents the information reported for the project by the developer and/or government sponsor. The projects in the matrix are organized as follows:

- a) Projects are separated according to media: Soil, Sludge, and Sediment Projects; and Groundwater Projects
- b) Within the media categories, projects are separated by technology type: Ex-Situ Biological; In-Situ Biological; Ex-Situ Physical or Chemical; In-Situ Physical or Chemical; Ex-Situ Thermal; In-Situ Thermal; Off-Gas Treatment
- c) Within the categories listed above, projects are listed alphabetically by technology

To avoid double-counting, cross-media and cross-technology projects are included in their principal categories. For example, technologies that address dense non-aqueous phase liquid (DNAPL) sources (such as dynamic underground stripping) may be applicable to both soil and groundwater and have thermal and physical/chemical technology components. Placement in the matrix in such a case depends on the intended application of the technology and the principal media of concern.

The matrix presents the following information for each project:

Column Column Name and Definition

- | | |
|-----|--|
| 1 | Technology: Name of Technology |
| 2-7 | Contaminant(s): An "X" indicates the type(s) of contaminant(s) treated |
| | <ul style="list-style-type: none"> - halogenated volatile organic compounds (VOCs) - nonhalogenated VOCs |

- halogenated semivolatile organic compounds (SVOCs)
- nonhalogenated SVOCs
- Inorganic compounds
- Explosives or propellants

- | | |
|----|--|
| 8 | Technical Comment Field: Specific contaminant(s) treated |
| 9 | Site or Waste Source Type: Background information on the industrial use of the demonstration site or the type of contamination source |
| 10 | Demonstration Date: Date (year) of the project. Usually the year listed is the start date for the demonstration project; however, in some cases the date reflects the year a report was issued. "Open" means the project is on-going |
| 11 | <i>Project Report Title</i> Reference Number (Page Number): Citations for published reports and other information for the project: titles are in italics; references numbers are in typeface; page numbers for references are in parentheses |
| 12 | Contact: Contact information for the developer, vendor, or other information source for the project |
| 13 | Sponsor: Name of the government agency sponsor of the project |
| 14 | EPA REACHIT: An "X" indicates that information for the project can be found in the EPA REACHIT system |

EPA's Remediation and Characterization Innovative Technologies (EPA REACH IT) system consolidates electronic data for site characterization and remediation technologies into an online searchable database. EPA REACH IT combines information from three established EPA databases, the Vendor Information System for Innovative Treatment Technologies (VISITT), the Vendor Field Analytical and Characterization Technologies System (Vendor FACTS), and the Innovative Treatment Technologies (ITT), to give users access to comprehensive information about treatment and characterization

technologies and their applications. It combines information submitted by technology service providers about remediation and characterization technologies with information from EPA, the U.S. Department of Defense (DoD), the U.S. Department of Energy (DOE), and state project managers about sites at which innovative technologies are being deployed.

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>Ex Situ Biological</i>													
Biopiles		X					JP-5, Diesel	Fuel Spills, Marine Corps Air-Ground Combat Center, Twenty-Nine Palms, CA	1992	<i>Biopiles of POL Contaminated Soils</i> [fact sheet] aec.army.mil/	USAEC Information Center Aberdeen Proving Ground, MD 800-USA-3845 t2hotline@aec.apgea.army.mil	USAEC	
Biopiles		X					TPH	Fuel Leaks, Marine Corps Mtn. Warfare Trng. Center, Bridgeport, CA		<i>Biopiles of POL Contaminated Soils</i> [fact sheet] aec.army.mil/	USAEC Information Center Aberdeen Proving Ground, MD 800-USA-3845 t2hotline@aec.apgea.army.mil	USAEC	
Bioreactor					X		Zn, Pb, Cu, Cd	Site Unknown	1997	"Biological, Chemical Processes Developed to Recover Metals," <i>HazTECH News</i> , 12:11, 5 June 1997	Alex Sol Inc. Ste-Foy, Quebec Richard Painchaud 418-657-2666	Env. Canada/ Canadian National Institute of Scientific Research	X
Bioremediation					X		Heavy Metals	Precious Metals Heap	1992	<i>Biological Cyanide Detoxification</i> EPA 542-B-93-009 (p 23)		USBM	
Bioremediation			X	X			PAHs, PCPs	Domtar Wood Preserving Facility, Trenton, Ont., Canada	1994	<i>DARAMEND™ Bioremediation Technology</i> , Grace Dearborn Inc. EPA 540-R-95-536	Grace Dearborn, Inc. 3451 Erindale Station Road Mississauga Ontario, Canada L5A 3T5 905-279-2222	USEPA-NRMRL	
Bioremediation							Dinoseb	Pesticides at Bower Field, Ellensburg, WA	1993	<i>Ex-Situ Anaerobic Bioremediation Technology: Dinoseb [the SABRE Process]</i> , J.R. Simplot Company EPA 540-R-94-508	J.R. Simplot P.O. Box 912 Pocatello, ID 83204 208-234-5367	USEPA-NRMRL	X
Bioremediation		X		X			Diesel Fuel, Transformer Oil	Two Different Sites	1992	<i>Bioremediation of Soil Contaminated by Transformer Oil and Diesel Fuel</i> DESRT 21 - Aug 94	Biogenie, Inc..	Environment Canada	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>Ex Situ Biological</i>													
Bioremediation/ Vacuum Extraction		X					TPH	Fuel Leaks	1989	Bioremediation/Vacuum Extraction EPA 542-B-93-009 (p 30)		NFESC	
Bioremediation		X		X			VOCs, PAH, TPH	Don River Valley, Toronto	1995	Mobile Ex-Situ Bioreactor Technology for the Remediation of Hydrocarbon Contaminated Soil DESRT - Mar 1995	Natural Environment Recovery, Inc. Richmond Hill, Ontario, Canada	Ontario ME and E	
Bioremediation	X						TCE	Fort Gillem, GA		Bioremediation of Chlorinated Solvents and Diesel Soils Abstract	U.S. Army/TVA/ENSR 2809 West Mall Drive Florence, AL 35630	U.S. Army, DPW	
Bioremediation	X	X					TCE, DCE, PCE, Acetone, MEK, MIBK	Sweden-3 Chapman Superfund Site, Sweden, NY	1995	Analysis of the New York State Demonstration of Bioremediation Technology at the Sweden-3 Chapman Site NY State Center for Hazardous Waste Management See also EPA 540-MR-95-524	ENSR Consulting and Engineering David Ramsden 713-520-9900; Larsen Engineers N. Sathiyakumar 716-272-7310	NY State DEC, Albany, NY	
Bioremediation		X					BTEX	Fuel Spill Site	1993	Bioremediation of Aromatic Hydrocarbons EPA 542-B-93-009 (p 29)		U.S. Navy, NW S, Seal Beach	
Bioremediation		X		X			Petroleum	Test Site	1994	Minnesota Department of Transportation, Biomound Field Evaluation Abstract	Minnesota Department of Transportation	USEPA Region 5	
Bioremediation			X	X			PAHs, PCPs	Escambia Wood Preserving Site, FL	1992	Bioremediation Field Initiative Profile: Escambia Wood Preserving Site EPA 540-F-95-506G	U.S. Forest Products Laboratory One Grifford Pinchot Drive Madison, WI 53705 608-231-9469	USEPA Region 4	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
Ex Situ Biological													
Bioremediation			X	X			TPH	Fuel Tank	1988	<i>Biological Remediation of a Fuel Contaminated Soil Site in Carson, California</i> Demonstration Report, 1990	Protek Environmental, Inc	OPPT	
Bioremediation		X					TPH	Two Maintenance Yards		<i>Bioremediation of Used Oil-contaminated Soil at Two Caltrans Maintenance Yards</i> Demonstration Report, Nov 1990	Groundwater Technology Corporation	OPPT	
Bioremediation			X		X		PCB	Oak Ridge Test Site	1994	<i>Bioremediation of PCB Contamination</i> DOE/EM-0248 (p.172)	Oak Ridge National Laboratory P.O. Box 2008 Oak Ridge, TN 37831 423-574-6813	USDOE	
Bioslurry						X	TNT, RDX, HMX	Ordnance Plant	1993	<i>Soil Slurry-Sequencing Batch Bioreactor</i> SFIM-AEC-TS CR-94038 - Jul 95	Argonne National Laboratory 9700 South Cass Avenue Argonne, IL 60439	USAEC	
Bioslurry				X			PAHs	Wood Preserving	1994	<i>Innovative Methods for Bioslurry Treatment</i> EPA 540-R-96-505	IT Corporation 1425 South Victoria Court, Suite A San Bernardino, CA 92408 909-799-6869	USEPA-NRMRL	
Bioslurry					X	X	PAHs, Metals	Iowa Army Ammunition Plant, Middletown, IA	Open	<i>Biotreatment of Explosives-Contaminated Soils in a Slurry Reactor</i> [fact sheet] www.estcp.org/projects/cleanup/remediation/199512o.htm	USAEC Aberdeen Proving Ground, MD Mark L. Hampton 410-436-6852 mlhampto@aec2.apgea.army.mil	ESTCP	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>Ex Situ Biological</i>													
Bioslurry					X	X	PAHs, Metals	Disposal Site	1993	<i>Slurry-Phase Bioremediation at the French Limited Superfund Site, Crosby Texas</i> EPA 542-R-95-001 (p 22)	Praxair, Inc. 39 Old Ridgebury Road Danbury, CT 06810 203-837-2174	USEPA Region 6	X
Bioslurry						X	TNT	Joliet Army Ammunition Plant	1995	<i>Field Demonstration of Slurry Reactor Biotreatment of Explosives-Contaminated Soils</i> USACE-CR-96178	Argonne National Laboratory, IL J.F. Manning		
Bioslurry				X			PAHs	Creosote Wood Preserving	1991	<i>Bioslurry Reactor</i> EPA 540-A5-91-009 (p. 31)	ECOVA Corp. Waste-Tech Services, Inc. 800 Jefferson County Parkway Golden, CO 80401 303-273-7177	USEPA-NRMRL	
Bioslurry				X			PAHs	Harbor Sediments from Town Gas Site, Utica, NY	1996	Slurry Biodegradation [An EPA SITE Program document will be produced.]	Remediation Technologies, Inc. (ReTec, formerly MoTec, Inc.) Pittsburgh, PA David Nakles 412-826-3340	USEPA-NRMRL	
Bioslurry (MGP-REM Process)				X			PAH, Metals, Cyanide	Former Manufac. Gas Plant (MGP) Site, NJ		"A Pilot-Scale Demonstration of an Innovative Soil Remediation Process: Air Emissions Quality," <i>J. of the AWMA</i> , 47:6 (p 710-715) June 1997	Institute of Gas Technology (IGT) Des Plaines, IL S.P. Pradhan. and V.J. Srivastava	IGT	
Bioslurry				X	X		TNT,RDX, HMX	Railroad Equipment	1992	<i>Slurry-Phase Bioremediation Project, Pacific Place Site</i> DESRT 05 - Apr 93	Chemical Waste Management of Canada, Inc.	ETAD	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>Ex Situ Biological</i>													
Bioslurry						X	TNT, RDX, HMX	Iowa Army Ammunition Plant, Middletown, IA		"Field Demonstration of Multiple Bioslurry Treatment..." <i>Remediation of Chlorinated and Recalcitrant Compounds</i> . 1998 (p 259-264)	J.R. Simplot P.O. Box 912 Pocatello, ID 83204 208-234-5367	ESTCP	
Composting						X	TNT, RDX, HMX	Ordnance, Badger Army Ammunition Plant, WI	1987	<i>Aerated Static Pile Composting</i> EPA 542-B-93-009 (p 3)	Roy F. Weston Inc. One Weston Way West Chester, PA 19380 610-701-7423	USAEC	X
Composting						X	Nitrocellulose	Propellants, Badger Army Ammunition Plant, WI	1988	<i>Aerated Static Pile Composting</i> EPA 542-B-93-009 (p 6)	Roy F. Weston Inc. One Weston Way West Chester, PA 19380 610-701-7423	USAEC	X
Composting						X	TNT, RDX, HMX	Ordnance, Louisiana Army Ammunition Plant (LAAP)	1987	<i>Aerobic Composting Optimization</i> EPA 542-B-93-009 (p 10)	Roy F. Weston Inc. One Weston Way West Chester, PA 19380 610-701-7423	USAEC	X
Composting						X	TNT, RDX, HMX	Umatilla Army Depot Activity (UADA)	1992	<i>Windrow Composting of Explosives Contaminated Soil at Umatilla Army Depot Activity</i> , Hermiston, OR EPA 542-R-95-001	Roy F. Weston Inc. One Weston Way West Chester, PA 19380 610-701-7423	USAEC	X
Composting		X					Crude Oil, TPH	Inactive Oil Exploration & Production Site, Alberta, Canada	1997	"Composting Crude Oil-Impacted Soil: Performance Comparison with Land Treatment and Soil Productivity Implications," <i>Bioreactor and Ex Situ Biological Treatment Technologies</i> . 1998 (p 189-196)	Chevron Canada Resources Rob Hoffmann 403-234-5000 Olds College Composting Technology Centre Donna Chaw 403-556-4787		

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
Ex Situ Biological													
Enhanced Bioremediation (Landfarming)	X					X	Organic Explosives, Chlorinated Solvents	Naval Air Station Yorktown, VA	1999	DARAMEND Soil Amendments to Remediate Explosives in Soils (Full Demonstration)	Grace Bioremediation Technologies		
Enhanced Anaerobic Bioremediation						X	TNT	Weldon Spring Ordnance Works, MO	1993	Ex-Situ Anaerobic Bioremediation System: TNT, J. R. Simplot Company EPA 540-R-95-529	J.R. Simplot P.O. Box 912 Pocatello, ID 83204 208-234-5367	USEPA SITE Program	
In Situ Biological													
Biodegradation		X		X			Motor Oil	Test Site	1993	Biodegradation of Lube Oil-Contaminated Soil EPA 542-B-93-009 (p 18)		U.S. Army CERL	
Biodegradation	X						TCE/PCE	Seepage Basin	1993	Biodegradation EPA 542-B-93-009 (p 17)	Westinghouse SRC, P.O. Box 616 Building 773-42A Aiken, SC 29802 803-725-5178	USDOE-SRC	
Biodegradation		X		X			Fuels, Oils, & Non-halogen Solvents	JP-4 at Elgin Air Force Base	1993	In Situ Biodegradation EPA 542-B-93-009 (p 49)		USAF, Armstrong Laboratory	
Biodegradation		X		X			Fuels, Oils, & Non-halogen Solvents	JP-4 at Kelly Air Force Base	1993	In Situ Biodegradation EPA 542-B-93-009 (p 49)		USAF, Armstrong Laboratory	
Biolysis, Dredging		X					Polystyrene Effluents	Manufacturing Plant	1993	Demonstration of Biotreatment Technology Using Biolysis™ and Dredging, Mansonville, Quebec DESRT - Aug 94	Sanexen Environmental	Environment Canada, TDB	

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SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Biological</i>													
Bioreactor						X	TNT, RDX, 2,4-DNT, 2,6-DNT, 1,3,5-TNB	SUBASE Bangor, WA		Ordnance Bioremediation [fact sheet] www.nfesc.navy.mil/ enviro/ps/projects/	Contact: NFESC Informa- tion Liaison help@nfesc.navy.mil	NFESC	
Bioremediation		X		X			Fuel Oil	Fuel Pipelines	1985	Biodecontamination of Fuel Oil Spills EPA 542-B-93-009 (p 15)		NFESC	
Bioremediation/ Electrokinetics						X	Cr	Camp Stanley Storage Activity Area, San Antonio, TX	1996	Resource Guide for Electrokinetics Laboratory & Field Processes Applicable to Radioactive & Hazardous Mixed Wastes in Soil & Groundwater... EPA 402-R-97-006 (p 60)	Lynntech, Inc. College Station, TX Dr. Tom Rogers 409-693-0017 Parsons Engineering	U.S. Army/ Parsons Eng.	
Bioremediation		X					BTEX	Refinery Site	1992	Integration of Pneumatic Fracturing with Bioremediation for the Enhanced Removal of BTEX Abstract	New Jersey Institute of Technology 138 Warren St. Newark, New Jersey 201-642- 7076	USEPA-NRMRL	
Bioremediation			X	X			PAH, Phenols	Wood Preserving	1992	In-Situ On-Site Bioremediation of Wood Treatment Soils Containing Chlorinated Phenols and PAHs DESRT 16 - Jun 94	Grace Dearborn Inc. 3451 Erindale Station Road Mississauga Ontario, Canada L5A 3T5 905-279-2222	ETAD,	
Bioremediation/ Electrokinetics							Chlorinated Solvents	Kennedy Space Flight Center, Cape Canaveral, FL	1998	Resource Guide for Electroki- netics Laboratory & Field Processes Applicable to Radioactive & Hazardous Mixed Wastes in Soil & Groundwater EPA 402-R-97-006 (p 59)	Lynntech, Inc. College Station, TX Dr. Tom Rogers 409-693-0017	NASA-SBIR	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Biological</i>													
Bioremediation/ Electrokinetics					X		Heavy Metals	Radford Army Ammunition Plant, VA	1996	<i>Resource Guide for Electroki- netics Laboratory & Field Processes Applicable to Radioactive & Hazardous Mixed Wastes in Soil & Groundwater</i> EPA 402-R-97-006 (p 56)	Lynntech, Inc. College Station, TX Dr. Tom Rogers 409-693-0017	U.S. Army-RAAP	
Bioremediation	X						TPH	Denver Federal Center, CO		"Bioremediation Barrier Emplaced through Hydraulic Fracturing," <i>Ground Water Currents</i> , March 1999	FOREMOST Solutions, Inc. Seth Hunt 303-271-9114 EPA Region 8 Sandra Stavnes stavnes.sandra@epa.gov	USEPA/GSA/ State of CO	
Bioremediation				X			PAH	Test Site	1993	<i>Bioremediation of Polyaromatic Hydrocarbon (PAH)-Contami- nated Soils Using White Rot Fungi</i> DESRT 13 - Apr 93	GEOBAC Technologies Group, Inc.	ETAD	
Bioremediation				X	X		PAH, HM, Cyanide	Railroad Equipment	1992	<i>Bioremediation Project Pacific Place Site</i> DESRT 07 - APR 93	Chem-Security/ Remediation Technologies	ETAD	
Bioremediation					X		Cyanide	Battle Mountain, NV		Biodegradation of Cyanide [An EPA SITE Program document will be produced.]	Pintail Systems, Inc. Aurora, CO Caren Caldwell 303-367-8443	USEPA-NRMRL	
Bioremediation				X			PAH	Wood Preserving	1994	<i>In-Situ On-Site Bioremediation of Wood Treatment Soils Containing Chlorinated Phenols and PAHs</i> DESRT 16 - Jun 94	Grace Dearborn Inc. 3451 Erindale Station Road Mississauga Ontario, Canada L5A 3T5 905-279-2222	ETAD	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Biological</i>													
Bioremediation			X	X			PCPs, PAHs	Wood Preserving	1992	<i>Risk Reduction Engineering Laboratory & USDA Forest Products Laboratory (Fungal Treatment)</i> EPA 540-R-94-526 (p 112)	USDA Forest Products Laboratory One Grifford Pinchot Drive Madison , WI 53705 608-231-9469	USEPA-NRMRL	
Bioremediation					X		U	Fernald, OH	1996	<i>Bioremediation of Uranium Contaminated Soils</i> [fact sheet] www.pnl.gov/WEBTECH/usid/bioremedia.html	EG&G Idaho, Inc. Idaho National Engineering Laboratory Gretchen E. Matthern 208-526-8747 gtn@inel.gov	USDOE-INEEL	
Bioremediation				X			PAHs, PCP, Creosote	Montana Pole Superfund Site, Butte, MT	1996	<i>DARAMEND™ Bioremediation Technology, GRACE Bioremediation Technologies</i> (p 5) EPA 540-R-95-536a	Grace Dearborn, Inc. Mississauga, Ontario, Canada LouAnn Cornacchio	USEPA	
Bioremediation			X	X			PAH, PCP	Wood Preserving		<i>Bioremediation Field Initiative Site Profile: Libby Ground Water Superfund Site</i> EPA 540-F-95-506A	EPA NRMRL/ Utah State University, UT	USEPA Region 8	
Bioremediation (Lasagna™)	X						TCE	Former Chemical Drum Storage Pad, Rickenbacker Air National Guard Base, OH	1998	"In Situ Bioremediation Using Horizontal Lasagna™," <i>Engineered Approaches for In Situ Bioremediation of Chlorinated Solvent Contamination</i> . 1999 (p 263-267)	U.S. EPA Cincinnati, OH Wendy J. Davis-Hoover 513-569-7206 davis-hoover.wendy@epa.gov	USEPA	
Bioslurping (x16)		X		X			LNAPLs	Military Air Base		(Tech Reports in Development)	Various Developers/ Vendors	AFCEE	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Biological</i>													
Bioslurping		X					TPH	Fuel Farm	1994	<i>Bioslurping- Vacuum-Enhanced Free-Product Recovery Coupled with Bioventing: A Case Study</i> Abstract	Battelle Columbus Laboratory 505 King Avenue Columbus, Ohio 43201 614-424-4698	U.S. Navy Public Works Department	
Bioventing		X					TPH	Airfield	1994	<i>Bioventing in Sub-Arctic Environments</i> EPA 542-B-93-009 (p 39)	Battelle Columbus Laboratory 505 King Avenue Columbus, Ohio 43201 614-424-4698	USAF, Armstrong Laboratory	
Bioventing		X					TPH	Airfield	1990	<i>Bioventing in the Vadose Zone</i> EPA 542-B-93-009 (p 37)	Battelle Columbus Laboratory 505 King Avenue Columbus, Ohio 43201 614-424-4698	USAF, Armstrong Laboratory	
Bioventing		X					TPH, BTEX	Bldg. 8200, Fort Carson, CO	1996	<i>Bioventing of POL Contaminated Soils</i> [fact sheet] aec.army.mil/	USAEC Information Center Aberdeen Proving Ground, MD 800-USA-3845 t2hotline@aec.apgea.army.mil	USAEC	
Bioventing		X					TPH	Selected DoD Sites	Open	<i>Natural Pressure-Driven Passive Bioventing</i> [fact sheet] www.estcp.org/projects/cleanup/remediation/199715o.htm	NFESC Port Hueneme, CA Sherrie Larson 805-982-4826 larsonsl@nfesc.navy.mil	ESTCP	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Biological</i>													
Bioventing		X					JP-4	Stratton Air National Guard Base (SANG). Scotia, NY		"System Heats Soil In Situ to Improve Bioremediation," <i>Soil & Groundwater Cleanup Online</i> www.sgcleanup.com	Donald J. Geisel & Associates Inc. Clifton Park, NY Don Geisel [HeatTrode components]	USAF- Armstrong Laboratory	
Bioventing	X	X					TCE, DCE, PCE, Acetone, MEK, MIBK	Sweden-3 Chapman Superfund Site, Sweden, NY	1995	R.E. Wright Associates, Inc., <i>In-Situ Field Bioremediation Treatment System</i> EPA 540-MR-95-525	R.E. Wright Associates, Inc.	NY State DEC, Albany, NY/ USEPA-NRMRL	
Bioventing				X			PAHs	Tar Distill. & Wood Pres.	1992	<i>Bioremediation Field Initiative Site Profile: Reilly Tar and Chemical Corporation Superfund Site</i> EPA 540-F-95-508H	Biosystems, Inc.	USEPA-NRMRL	
Bioventing		X		X			Hydrocarbons	Airfield	1992	<i>Bioventing</i> , EPA 542-B-93-009 (p 35)	Battelle Columbus Laboratory 505 King Avenue Columbus, Ohio 43201 614-424-4698	U.S. Navy Public Works Department	X
Bioventing		X					TPH, BTEX	Gas Station	1994	<i>Performance Report/Cost Evaluation of Purus Padre System for the Treatment of Hydrocarbon Vapors</i> Performance Report - Apr 95	Purus, Inc. 2713 N. First Street San Jose, CA 95134-2000	AFCEE	X
Bioventing				X			PAHs	Reilly Tar Superfund Site, St. Louis Park, MN	1997	"Bioventing for Enhanced Degradation of PAHs," <i>Tech Trends</i> , Aug 1999	EPA National Risk Management Research Laboratory (NRMRL) Dr. Paul McCauley 513-569-7444 mccauley.paul@epa.gov	USEPA-NRMRL	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Biological</i>													
Bioventing/		X		X			PAHs, BTEX	Strachan Gas Plant, Canada	1994	"Cold Climate Soil Bioventing," <i>Tech Trends</i> , Mar 1995	GASReP Alex Lye, Manager 905-336-6438	USDOE/ Environment Canada	
Bioventing/		X					TPH	Bldg. 675, Fort Bliss, TX	1996	<i>Bioventing of POL Contaminated Soils</i> [fact sheet] aec.army.mil/	USAEC Information Center Aberdeen Proving Ground, MD 800-USA-3845 t2 hotline@aec.apgea.army.mil	USAEC	
Soil Warming		X		X			TPH, BTEX	Airfield	1994	<i>Refueling Loop E-7, Source Area ST20, Bioventing at Eielson Air Force Base, Alaska</i> EPA 542-R-95-001 (p 20)	Pacific Northwest Laboratory Battelle Blvd. Richland, WA 99352 509-376-0554	USAF/CEVR	X
Bioventing		X					TPH, BTEX	SWMU 14, Fort Rucker, AL	1996	<i>Bioventing of POL Contaminated Soils</i> [fact sheet] aec.army.mil/	USAEC Information Center Aberdeen Proving Ground, MD 800-USA-3845 t2 hotline@aec.apgea.army.mil	USAEC	
Bioventing		X		X			JP-4Jet Fuel Spill	Airfield	1995	<i>Bioventing Petroleum Hydrocarbons, Cold Climate with Soil Warming: Field Study, Eielson AFB, Alaska</i> Bioremediation Field Evaluation	National Risk Management Research Laboratory, 26 W. Martin Luther King Drive Cincinnati, OH 513-569-7328	USAF, Armstrong Laboratory	
Bioventing (x125)		X		X			Hydrocarbons	Military Air Base		<i>Bioventing Principles and Practices</i> <i>Volume I: Bioventing Principles</i> EPA 540-R-95-534a <i>Volume II: Bioventing Design</i> EPA 540-R-95-534b	Various Developers/ Vendors	AFCEE	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Biological</i>													
Bioventing	X	X					TCE, DCB, BTEX	Chemical Disposal Pit, Hill AFB, UT	1999	"Bioventing Nonpetroleum Hydrocarbons," <i>Engineered Approaches for In Situ Bioremediation of Chlorinated Solvent Contamination</i> . 1999. (p 7-14)	Battelle Columbus, OH James T. Gibbs 614-424-6424		
Bioventing		X		X			Hydrocarbons	St. Louis Park, MN	1997	Bioventing (Air-Injection) [An EPA SITE Program document will be produced.]	National Risk Management Research Laboratory Cincinnati, OH Paul McCauley 513-569-7444	USEPA-NRMRL	
Bioventing		X		X			Hydrocarbons	Industrial Wastes	1992	<i>Bioventing</i> , EPA 542-B-93-009 (p 33)	National Risk Management Research Laboratory 26 W. Martin Luther King Drive Cincinnati, OH 513-569-7444	USEPA-NRMRL	
Enhanced Biodegradation		X					TPH	Oil/Water Sump Spill	1991	<i>Enzyme Catalyzed, Accelerated Biodegradation</i> EPA 542-B-93-009 (p 41)	Inplant Bio Remedial Services, Inc. P.O. Box 3385 Long Beach, California 90803 310-987-3746	U.S. Marine Corp Base, Facilities Maintenance	
Enhanced Bioremediation		X		X			Hydrocarbons	Airfield	1993	<i>Augmented In-Situ Subsurface Bioremediation Process</i> , <i>Bio-Rem, Inc.</i> EPA 540-MR-93-527	Bio-Rem Inc., P.O. Box 116, Butler, IN 46721 219-868-5823	USEPA-NRMRL	

Technology °	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Biological</i>													
Enhanced Bioremediation	X						TCE	Picatinny Arsenal, NJ	1999	Air Sparging and In-Situ Bioremediation Research and Demonstration at Picatinny Arsenal, NJ: USGS PROJECT NJ141 - SERDP Bioremediation	USGS District Office - West Trenton Jeffrey M. Fischer 609-771-3900	USGS/SERDP	
Enhanced Bioremediation		X					BTEX	Formerly JimBo's Gas N'Goodies, Aiken, SC	1999	<i>PHOSter Bioremediation Technology: Award- Winning Technology Demonstrated in Downtown Augusta</i> setechctr.org/Environmental/phoster.htm	Southeastern Technology Center (STC) Jim Ullery 706-722-3490 JUllery@setechctr.org	STC/USDOE-SR	
Enhanced Bioremediation		X					VOCs	Savannah River Site, Aiken, SC	1993	<i>In Situ Bioremediation Using Horizontal Wells</i> DOE/EM-0270 - Apr 95		USDOE, OST	
Enhanced Bioremediation	X						TCE, PCE	Savannah River Site, Aiken, SC	1993	<i>Case Study: Full-Scale In Situ Bioremediation Demonstration (Methane Biostimulation) of the Savannah River Site Integrated Demonstration Project</i> WSRC-TR-96-0044	Westinghouse Savannah River Co. Aiken, SC T.C. Hazen	USDOE-WSRC	
Enhanced Bioremediation	X						Chlorinated Solvents	Pinellas STAR Center, Largo, FL	1997	<i>Performance Evaluation of an In Situ Anaerobic Biotreatment System for Chlorinated Solvents</i> EPA 600-A-98-041	Envirogen, Inc. Lawrenceville, NJ M.F. DeFlaun	USEPA-NRMRL	
Enhanced Bioremediation		X					BTEX	Fuel Depot, Augusta-Richmond County Central Shop, GA	Open	<i>PHOSter Bioremediation Technology: Award- Winning Technology Demonstrated in Downtown Augusta</i> setechctr.org/Environmental/phoster.htm	Southeastern Technology Center (STC) Jim Ullery 706-722-3490 JUllery@setechctr.org	STC/USDOE-SR	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Biological</i>													
Enhanced Bioremediation		X					BTEX	Fuel Spill Site, Leland, NC		<i>Enhanced Bioremediation of BTEX Using Immobilized Nutrients: Field Demonstration and Monitoring</i> EPA 600-R-96-145	North Carolina State University Raleigh, NC Robert C. Borden 919-515-1625 rcborden@eos.ncsu.edu	USEPA-NERL	
Enhanced Bioremediation	X						TCE, VC, DCE	Savannah River Site Sanitary Landfill, Aiken, SC		<i>Evaluation of Methanotrophic Bacteria During Injection of Gaseous Nutrients for In Situ Trichloroethylene Bioremediation in a Sanitary Landfill</i> WSRC-MS-98-00854	Westinghouse Savannah River Co. Aiken, SC Robin L. Brigmon	USDOE-WSRC	
Evapotranspiration Barrier (Vegetative Cap)	X	X	X	X	X		Landfills, Surface Impound-ments	Marine Corps Base Hawaii, Kaneohe Bay	1994	"Infiltration Control Cover Technology Demonstration at Marine Corps Base Hawaii, Kaneohe Bay," <i>Alternative Landfill Capping</i> [fact sheet]	NFESC Information Liaison help@nfesc.navy.mil	NFESC/ LANL/Col. State Univ.	
Land Treatment		X					PAHs	Lumber Treatment	1991	<i>Land Treatment at the Scott Lumber Company Superfund Site, Alton, Missouri</i> EPA 542-R-95-001	Remediation Technologies, Inc. 1001 24 th Street, Suite 105 Billings, MT 59102 406-652-7481	USEPA Region 7	X
Land Treatment				X			PAHs	Wood Preserving	1990	<i>Land Treatment at the Brown Wood Preserving Superfund Site, Live Oak, Florida</i> EPA 542-R-95-001	Remediation Technologies, Inc. 1011 Southwest Klickitat Way Suite 207 Seattle, Washington 98134 206-624-9349	USEPA Region 4	X

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Biological</i>													
Bioremediation w/ Lasagna™	X						TCE	Former Chemical Drum Storage Pad, Rickenbacker Air National Guard Base, OH	1998	In Situ Bioremediation Using Horizontal Lasagna™, "Engineered Approaches for In Situ Bioremediation of Chlorinated Solvent Contamination." 1999. (p 263-267)	U.S. EPA Cincinnati, OH Wendy J. Davis-Hoover 513-569-7206 davis-hoover.wendy@epa.gov	USEPA	
Phytoremediation					X		Pb	Twin Cities Army Ammunition Plant, MN (2 Sites)	Open	Phytoremediation of Lead Contaminated Soil [fact sheet] www.estcp.org/projects/cleanup/remediation/199809o.htm	USAEC SFIM-AEC-ETD Aberdeen Proving Ground, MD Darlene Bader 410-612-6861 dbader@aec.apgea.army.mil	ESTCP	
Phytoremediation					X		Heavy Metals	Trenton, NJ Site	1998	Phytoextraction of Metal from Soil [An EPA SITE Program document will be produced.]	Phytotech, Inc. Monmouth, NJ Burt Ensley 908-438-0900	USEPA-NRMRL	
Phytoremediation					X		Pb, Zn, Cd	Dearing, KS		Phytostabilization Demonstration, One Acre Test Plot Abandoned Smelter, Barren Land, <i>Phytoremediation: Technology Evaluation Report.</i> GWRTAC TE-98-01 (p 8)	Kansas State University G. Pierzynski 785-532-7209 gmp@ksu.edu	KSU	
Phytoremediation					X		Heavy Metals	Augusta-Richmond County Landfill, Augusta, GA	Open	Phytoremediation Project: Technology to Remove Heavy Metal from Landfill setechctr.org/Environmental/phytohem.htm	Southeastern Technology Center (STC) Jim Ullery 706-722-3490 JUllery@setechctr.org [Vendor: Applied Natural Sciences, Inc.]	STC/USDOE-SR	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH.IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Biological</i>													
Phytoremediation					X		As, Cd	Whitewood Creek, SD		Phytostabilization Demonstration, One Acre Test Plot, Mine Wastes, <i>Phytoremediation: Technology Evaluation Report</i> . GWRTAC TE-98-01 (p 8)	University of Iowa Jerald R. Schnoor 319-335-5649 jschnoor@cgrer.uiowa.edu		
Phytoremediation	X						TCE	Air Force Plant 4, Fort Worth, TX	Open	<i>Plant Enhanced Bioremediation of Contaminated Soil and Groundwater</i> [fact sheet] www.estcp.org/projects/cleanup/remediation/199519o.htm	ASC/EMR Wright-Patterson AFB, OH Gregory Harvey 937-255-7716 ext. 302 harveygj@emsmtf.wpafb.af.mil	ESTCP	
Phytoremediation		X		X			PAHs, Oil Lubricants, Petroleum	Selected Northern Sites on FUDS/ Native Indian Lands	Open	<i>Rhizosphere Enhanced Treatment of Organics- Contaminated Soils on Native American Lands</i> [fact sheet] www.estcp.org/projects/cleanup/native_american/1011o.htm	U.S. Army CRREL 72 Lyme Rd. Hanover, NH 37551 Dr. Mike Reynolds 603-646-4394 reynolds@hanover-crrel.army.mil	ESTCP	
Phytoremediation					X		Cs(137)	Brookhaven National Laboratory	1998	"Biomass Remediation System (TMS #251)," <i>SCFA Midyear Review Report and Supporting Documentation, 1999</i> www.envnet.org/envnet/scfa/rep%2Dpub/annrep98/fy98.htm		USDOE	
Phytoremediation					X		U	DOE Site, Ashtabula, OH	1997	Rhizofiltration Demonstration, DOE Energy Wastes, <i>Phytoremediation: Technology Evaluation Report</i> . GWRTAC TE-98-01 (p 8)	Phytotech, Inc. Monmouth, NJ Burt Ensley 908-438-0900	USDOE	
Phytoremediation					X		Heavy Metals	Small Arms Firing Range, Adak Naval Air Station, Adak, AK	Open	<i>Demonstration and Validation of the Range Safe Systems on Native American Lands</i> [fact sheet] www.estcp.org/projects/cleanup/native_american/2002o.htm	ARDEC Industrial Ecology Center Picatinny Arsenal, NJ James Franklin 973-724-5650 DSN: 8805650 jfrank@pica.army.mil	ESTCP	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>Ex Situ Physical/Chemical</i>													
Chemical Fixation		X		X	X		Metals and Organics	Refinery	1987	SAREX Chemical Fixation Process, EPA 542-B-93-009 (p72)	Separation and Recovery Systems Inc., 1762 McGraw Ave. Irvine, CA 92714 714-261-8860	USEPA-NRMRL	X
Chemical Fixation/ Solidification			X		X		PCPs, Metals	Wood Preserving	1990	Silicate Technology Corporation Solidification and Stabilization of Organic/Inorganic Contaminants EPA 540-AR-92-010	STC Omega, Inc. 7655 East Gelding Drive Suite B-2 Scottsdale, AZ 85260 602-948-7100	USEPA-NRMRL	
Chemical Leaching					X		Hg	Sandy Soil from a Natural Gas Metering Site in NM	1993	Remediation of Mercury-Contaminated Soils: Development and Testing of Technologies EERC Report	North Dakota Univ. at Grand Forks Energy & Env. Research Center (EERC) David S. Charlton 701-777-5214 dcharlton@eerc.und.nodak.edu	EERC/USDOE/Gas Research Institute/ Union Gas Limited (Canada)	
Chemical Leaching					X		Hg	Clay Soil from a Mercury Recycling Facility in Bedford, OH	1993	Remediation of Mercury-Contaminated Soils: Development and Testing of Technologies EERC Report	North Dakota Univ. at Grand Forks Energy & Env. Research Center (EERC) David S. Charlton 701-777-5214 dcharlton@eerc.und.nodak.edu	EERC/USDOE/Gas Research Institute/ Union Gas Limited (Canada)	
Chemical Oxidation	X				X		Low-Level Mixed Wastes, Solvents	LLNL, Livermore, CA	1997	Fiscal Year 1997 Demonstration of Omnivorous Non-Thermal Mixed Waste Treatment: Direct Chemical Oxidation of Organic Solids and Liquids Using Peroxydisulfate UCRL-ID-129826	Lawrence Livermore National Laboratory Livermore, CA John Bowers	USDOE-LLNL	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>Ex Situ Physical/Chemical</i>													
Chemical Oxidation					X		Zn, Pb, Cu, Cd	Unidentified Site in Canada		"Biological, Chemical Processes Developed to Recover Metals," <i>HazTECH News</i> , 12:11, 5 June 1997	Alex Sol Inc. Ste-Foy, Quebec Richard Painchaud 418-657-2666	Env. Canada/ Canadian National Institute of Scientific Research	
Chemical Oxidation	X	X					TCE, Petroleum Hydrocarbons	Anniston Army Depot, AL	1996	"Rapid Delivery System Completes Oxidation Picture: Remediation of Chlorinated Solvents at Two Government Sites..." <i>Soil & Groundwater Cleanup Online</i> www.sgcleanup.com	QST Environmental Gainesville, FL R.S. Levin Geo-Cleanse International, Inc. Kenilworth, NJ J. Wilson	USACE	
Chemical Oxidation						X	TNT, RDX, TNB	Cornhusker Army Ammunition Plant Grand Island, NE	1996	<i>Peroxone Demonstration Performance and Cost Evaluation</i> SFIM-AEC-ET-CR-98-019	USAEC SFIM-AEC-ETD Building E4430 Aberdeen Proving Ground, MD 21010-5401 410-612-6846 jgheffin@aec2.apgea.army.mil	ESTCP-USAEC	
Chemical Treatment					X		Lead, Heavy Metals	Ordnance	1994	<i>Cognis, Inc. (Chemical Treatment)</i> EPA 540-R-94-526 (p. 50)	Cognis, Inc. 2330 Circadian Way Santa Rosa, CA 95407 707-576-6235	USEPA-NRMRL	
Chemical Treatment			X				Dioxin, Chlorinated Aromatics			<i>Chemical Detoxification of Chlorinated Aromatic Compounds - Dioxin & Herbicides in Soil</i> EPA 542-B-93-009 (p 61)	Naval Facilities Engineering Service Center, Code ESC 40 Port Hueneme, CA 93043-4370, 805-982-1668	USEPA-NRMRL	
Chemical Treatment	X		X	X	X		Heavy Metals, Oil and Grease	Oil Processing Plant	1987	<i>Chemical Treatment and Immobilization</i> EPA 542-B-93-009 (p 63)	Funderburk & Associates Route 1, Box 250 Oakwood, Texas 75855 800-227-6543	USEPA-NRMRL	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>Ex Situ Physical/Chemical</i>													
Chemical Treatment					X		Heavy Metals	Drum Storage Area		<i>Chemical Reduction of Hexavalent Chromium Contaminated Soils for a Site in Bakersfield, CA</i> Demonstration Report Jun 91	Versar Inc.	OPPTD	
Debris Washing (Drums)			X				Benzonitrile, Dicamba (Pesticides)	Shaver's Farm Site, Walker County, GA	1990	<i>Design and Development of a Pilot-Scale Debris Decontamination System</i> EPA 540-5-91-006a & b	National Risk Management Research Laboratory Cincinnati, OH Donald Sanning 513-569-7875	USEPA-NRMRL	
Debris Washing (Drums)			X				PCBs	Superfund Site, Hopkinsville, KY	1989	<i>Design and Development of a Pilot-Scale Debris Decontamination System</i> EPA 540-5-91-006a & b	National Risk Management Research Laboratory Cincinnati, OH Donald Sanning 513-569-7875	USEPA-NRMRL	
Debris Washing (Drums)			X				PCBs	Carter Industrial Superfund Site, Detroit, MI	1988	<i>Design and Development of a Pilot-Scale Debris Decontamination System</i> EPA 540-5-91-006a & b	National Risk Management Research Laboratory Cincinnati, OH Donald Sanning 513-569-7875	USEPA-NRMRL	
Electrocoagulation					X		U, P, Am	Rocky Flats Denver, CO	1995	<i>CURE Electrocoagulation Technology, General Environmental Corporation</i> EPA 540-R-96-502	General Environmental Corp., Inc. Englewood, Colorado Carl Dalrymple 303-761-6960	USDOE/ USEPA-NRMRL	
Entrained Bed Gasification	X	X	X	X	X		Non-specific Organics/ Inorganics	Oil Processing	1994	<i>Texaco Gasification Process - Texaco Inc.,</i> EPA 540-MR-94-514	Texaco Inc. 2000 Westchester Ave. White Plains, NY 10650 914-253-4047	USEPA-NRMRL	X

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>Ex Situ Physical/Chemical</i>													
Excavation Techniques and Foam Suppression		X		X			Hydrocarbons	McColl Superfund Site	1990	<i>McColl Superfund Site- Demonstration of a Trial Excavation</i> EPA 540-AR-92-015	U.S. EPA Region 9 Mail Code H-7-1 75 Hawthorne Ave San Francisco, CA 94105 415-744-2400	USEPA-NRMRL	
Extraction from Porous Surfaces			X		X		PCBs, Metals	Pearl Harbor, HI	1997	PCB/Metals Extraction from Porous Surfaces [An EPA SITE Program document will be produced.]	EET, Inc. Bellaire, TX Tim Tarrillion 713-662-0727	NFESC/USEPA- NRMRL	
Gas-Phase Chemical Reduction			X	X			PCBs, PAHs, Dioxin	Harbor Sediment		<i>Demonstration of Thermal Gas- Phase Reduction Process</i> EPA 542-R-95-006 (p 3)	ELI Eco Logic Interna- tional, Inc. 143 Dennis Street Rockwood, Ontario, Canada NOB 2KO 519-856-9591	USEPA-NRMRL	X
Immobilization			X		X		PCBs, Heavy Metals	Oil Processing	1987	<i>Hazcon - Solidification</i> EPA 540-A5-89-001	Funderburk & Associates Route 1, Box 250 Oakwood, Texas 75855 800-227-6543	USEPA-NRMRL	
Liquified Gas Solvent Extraction			X				PCBs	Harbor Sediment	1988	<i>CF Systems Corp. - Solvent Extraction</i> EPA 540-A5-90-002	CF Systems Corporation 3D Gill Street Woburn, MA 01801 617-937-0800	USEPA-NRMRL	X
MAECTITE Process					X		Lead	VA, IN, MI, OH, SD, WI Sites	1991	<i>MAECTITE Process Leads in Soils, Sludges, Other Waste Materials, and Debris</i> EPA 542-B-93-009	MAECORP, Inc. 155 North Wacker Drive, Suite 400 Chicago, Illinois 60606 312-853-4050	USEPA-NRMRL	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
Ex Situ Physical/Chemical													
Physical Separation					X		Hg	Sandy Soil from a Natural Gas Metering Site in NM	1993	<i>Remediation of Mercury-Contaminated Soils: Development and Testing of Technologies</i> EERC Report	North Dakota Univ. at Grand Forks Energy & Env. Research Center (EERC) David S. Charlton 701-777-5214 dcharlton@eerc.und.nodak.edu	EERC/USDOE/Gas Research Institute/ Union Gas Limited (Canada)	
Physical Separation					X		Heavy Metals	Small Arms Firing Range, Ft. Polk, LA	1996	<i>Cleanup/Maintenance of Ranges</i> [fact sheet] www.afcee.brooks.af.mil/p2cd/factshee/rm/cleanups.htm	U.S. Army Environmental Hotline 800-USA-3845, DSN 585-1699	ESTCP/ USAEC/ NSEFC	
Physical Separation					X		Metals, Pesticides	Iron Mountain Mine Superfund Site, Redding, CA	1992	<i>EPOC Water, Inc. Microfiltration Technology</i> EPA 540-AR-93-513	EPOC Water, Inc. 3065 Sunnyside, Suite 101 Fresno, CA 93727 209-291- 8144	USEPA-NRMRL	
Physical Separation					X		Hg	Mercury Recycling Facility, Bedford, OH	1994	<i>Task 38: Commercial Mercury Remediation Demonstrations: Thermal Retorting and Physical Separation/Chemical Leaching</i> DOE/MC/30098--5643	Environmental Technologies International (ETI) Shillington, PA North Dakota Univ. at Grand Forks Energy & Env. Research Center D.S. Charlton	USDOE/Gas Research Institute	
Physical Separation			X				PCBs	River Sediment	1992	<i>Particle Separation Process</i> EPA 542-B-93-009 (p 161)	Bergmann USA (Out of Business) EPA-NRMRL Jack Hubbard 513-569-7507	U.S. Army Engineer District	X
Physical Separation					X		Pb	Firing Range, Marine Corps Base Quantico, VA	1994	"USBM, Navy Target Firing Range Soil," <i>U.S. Bureau of Mines Env. Programs</i> www.nttc.edu/env/	U.S. Bureau of Mines Jerold Johnson	USBM/ NFESC	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
Ex Situ Physical/Chemical													
Physical Separation/ Chemical Leaching/ Soil Washing/ Fluidized Bed/ Classifier					X		Cu, Cr, Pb, Z	Hunter's Point Shipyard, San Francisco, CA		"Soil Washing System Employs Aggressive Conditions to Handle Organics. Inorganics," <i>HazTech News</i> , 13:6, 9 Apr 1998	ChemTech Analysis, Inc. Klohn-Crippen Consultants Ltd. Richmond, BC, Canada Rob Stephenson 604-273-0311	BADCAT/ NFESC	X
Precipitation/ Filtration		X		X	X		Pesticides, Oil, Grease	Iron Mine	1991	<i>Precipitation, Microfiltration, and Sludge Dewatering</i> EPA 542-B-93-009 (p. 216)	EPOC Water Inc. 3065 Sunnyside, Suite 101 Fresno, CA 93727 209-291-8144	USEPA-NRMRL	
Selective Extraction					X		Uranium	Uranium Products Production		<i>Selective Extraction, Uranium in Soil</i> EPA 542-B-93-009 (p. 222)		USDOE-FERMC	
Soil Leaching/ Soil Extraction					X		Heavy Metals	Twin Cities Army Ammunition Plant, MN	1994	<i>OGNIS TERRAMET Lead Extraction Process</i> EPA 540-R-96-535	Cognis, Inc. 2330 Circadian Way Santa Rosa, California 95407 707-576-6235	U.S. Army, Twin Cities Army Ammunition Plant	X
Soil Recycling		X		X	X		Lead, Oil, PAHs	Metal Finishing & Refinery Products	1992	<i>Toronto Harbor Commissioners - Soil Recycling Treatment Train</i> EPA 540-AR-93-517	Toronto Harbor Commission 60 Harbor Street Toronto, Ontario, Canada M5J1B7 416-863-2071	USEPA-NRMRL	
Soil Recycling		X		X	X		PAH, Oils & Grease	Industrial Site		<i>Soil Recycling, Organics, and Inorganics in Soils</i> EPA 542-B-93-009 (p. 223)		USDOE-FERMC	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
Ex Situ Physical/Chemical													
Soil Washing		X		X			Hydrocarbon Contaminants	Oil and Gas Extraction	1994	Soil Tech Environmental Systems Demonstrates Aqueous-Based Soil Wash System in Oak Ridge CET Newsletter, Vol. 1, No. 1, Spring 1994	Soil Tech Environmental	USDOE CET	
Soil Washing					X		Cs-137	East TN Technology Park (ETTP), Oak Ridge, TN	1995	Soil Washing for Volume Reduction [fact sheet] www.ornl.gov/K25/techdemo/soilwash.htm	Oak Ridge National Lab. (ORNL) Ron Anderson 423-241-1754 oq1@ornl.gov	USDOE-ORNL	
Soil Washing					X		U	DOE Site, Ashtabula, OH	1997	Demonstrated Soil Treatment... Carbonate Treatment... Pilot Plant Installation www.ohio.doe.gov/oh-stcg	DOE Ohio Sites Technology Coordination Group (STCG) Ward Best 440-993-1944 ward.best%ch@ch.doe.gov	USDOE-Ohio STCG	
Soil Washing					X		Pu, Thorium	DOE Mound Facility, Miamisburg, OH	1997	"Mound Pilots Process That Washes Soil Clean," New Directions, Jun/Jul 1997 (p 1 & 6)	Selective Environmental Technologies, Inc. (Selentec), Atlanta, GA Michael Dunn	USDOE-Ohio STCG	X
Soil Washing			X				PCBs	Warehouse		Soil Restoration Unit EPA 542-B-93-009 (p 165)	Terra-Kleen Corporation 7321 North Hammond Ave. Oklahoma City, OK 73132 405-728-0001	USEPA-NRMRL	X
Soil Washing					X		Heavy Metals	Oxidation Lagoons	1992	Soil Washing EPA 542-B-93-009 (p 168)		U.S. Army EMD	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>Ex Situ Physical/Chemical</i>													
Soil Washing				X			PAHs	Cape Fear Superfund Site, NC	1996	"Holding Company Makes Acquisitions; Firm Designs Fines Washing Equipment," <i>HazTECH News</i> , 12:4, 27 Feb 1997	TVIES, Inc. Houston, TX		
Soil Washing				X	X		Heavy Metal, PAH	Field	1994	<i>Field-Based Pilot Scale Remediation Trials for Industrial-Contaminated Hazardous Soils</i> DESRT 17 - Aug 94	Tallon Metal Technologies, Inc. 1961 Cohen, Ville St. Laurent, Quebec, Canada H4R2N7 514-335-0057	ETAD	
Soil Washing	X	X	X	X			PCBs, VOCs, PAHs	Refinery	1992	<i>Biogenesis Soil Washing Technology</i> EPA 540-R-93-510	Biogenesis Enterprises, Inc., 7420 Alban Station Blvd Suite B-208 Springfield, VA 22150 703-913-9700	USEPA-NRMRL	
Soil Washing			X	X			PCPs, PAHs	Escambia Wood Preserving, Pensacola, FL	1992	<i>U.S. EPA - Mobile Volume Reduction Unit</i> EPA 540-AR-93-508	National Risk Management Research Laboratory - Edison 2890 Woodbridge Edison, NJ 08837 908-321-6629	USEPA-NRMRL	
Soil Washing				X	X		PCB-Heavy Metal	Metal Scrap Yard	1992	<i>Soil Washing and Bioslurry Reactor Treatments for PCB - Heavy Metal Contaminated Soils</i> DESRT 14 - Dec 93	Washburn & Gillis Associates, Ltd.	ETAD	
Soil Washing				X	X		PAH, Heavy Metals	Industrial Sites		<i>Integrated Treatment Technology for the Inorganic and Organic Contaminants from Soil</i> EPA 542-R-95-006 (p 7)	Tallon Metal Technologies, Inc. 1961 Cohen, Ville St. Laurent Quebec, Canada H4R2N7 514-335-0057	ETAD	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>Ex Situ Physical/Chemical</i>													
Soil Washing			X		X		PCBs and Metals	Shipyard	1992	<i>Bergmann USA, - Soil and Sediment Washing System</i> EPA 540-MR-92-075	Bergmann USA (Out of Business) EPA-NRMRL Jack Hubbard 513-569-7507	USEPA-NRMRL	X
Soil Washing			X				Pesticides: Heptachlor, Dieldrin	Sand Creek Superfund Site, Commerce City, CO	1992	<i>Mobile Volume Reduction Unit at the Sand Creek Superfund Site</i> EPA 540-MR-93-512	National Risk Management Research Laboratory - Edison 2890 Woodbridge Edison, NJ 08837 908-321-6629	USEPA-NRMRL	
Soil Washing			X	X	X		PAHs PCBs, Metals	Wood Preserving	1989	<i>Biotrol Soil Washing System</i> EPA 540-A5-91-003	Biotrol Inc. 10300 Valley View Road Suite 107 Eden Prairie, MN 55344 612-942-8032	USEPA-NRMRL	X
Soil Washing		X		X			Hydrocarbons	Fuels	1992	<i>RENEU Extraction Technology</i> EPA 542-B-93-009 (p 163)	Terrasys, Inc., 912-D Pancho Road, Camarillo, CA 93012 805-389-6766	USEPA-NRMRL	
Soil Washing					X		Copper, Lead, and Arsenic	Industrial	1992	<i>Application Of Tallon Technology In the Dickson Remediation Project</i> DESRT 23 - Aug 94	Bombadier, Inc. Dehydro-Tech Corporation, 6 Great Meadow Lane, East Hanover, NJ 07936 201-887-2182	TDB Environment Canada	
Soil Washing		X		X			TPH, Oil- Soluble Organics	Oil Processing	1991	<i>Carver-Greenfield Process</i> EPA 542-B-93-009 (p 154)		USEPA-NRMRL	X

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>Ex Situ Physical/Chemical</i>													
Soil Washing					X		Heavy Metals	Battery Yard	1992	Bescorp Soil Washing System Battery Enterprises Site - Brice Environmental Services, Inc. EPA 540-A5-93-503	Brice Environmental Service Corp. P.O. Box 73520 Fairbanks, AK 99707 907-452-2512	USEPA-NRMRL	
Soil Washing					X		Heavy Metals	Impoundment Lagoon	1993	Soil Washing at the King of Prussia Technical Corporation Superfund Site, Winslow Township, NJ EPA 542-R-95-001 (p 86)	Alternative Remediation Technologies, Inc. 14497 Dale Mabry Highway Tampa, FL 33618 813-264-3506	USEPA Region 2	X
Soil Washing					X		Heavy Metals	Small Arms Firing Range, Adak Naval Air Station, Adak, AK	Open	Demonstration and Validation of the Range Safe System on Native American Lands [fact sheet] www.estcp.org/projects/cleanup/ native_american/2002o.htm	ARDEC Industrial Ecology Center Picatinny Arsenal, NJ James Franklin 973-724-5650 DSN: 8805650 jfrank@pica.army.mil	ESTCP	
Soil Washing		X		X			PCBs, Oils	Warren, MI Site	1993	Surfactant Washing Demon- stration, General Motors NAO Research & Development Center EPA 542-R-95-001 (p 9)	General Motors NAO R&D Center Warren, MI 48090-9055 810-986-1600	GM NAO	
Soil Washing				X			DNAPLs, CTET	Corpus Christi, TX Site	1992	Corpus Christi Dupont Site SUNY Buffalo Corporate Remediation Group EPA 542-K-94-003 (p 7)	NYS University at Buffalo Dept. of Geology 772 Natural Science Complex Buffalo, NY 14260, 716-645-6800 x3996	NYS University at Buffalo	
Solidification/ Stabilization			X		X		PCPs, Metals	Wood Preserving	1990	Silicate Technology Corporation Solidification and Stabilization of Organic/Inorganic Contaminants EPA 540-AR-92-010	STC Omega, Inc. 7655 East Gelding Drive Suite B-2, Scottsdale, AZ 85260, 602-948-7100	USEPA-NRMRL	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
Ex Situ Physical/Chemical													
Solidification/ Stabilization					X		Radioactive Ash (Al, Ca, Fe, Mg, Na, Fl, Nitrate, Phosphate)	Savannah River Site Incinerator, Aiken, SC	1998	Phosphate Bonded Solidifica- tion of Radioactive Incinerator Wastes WSRC-MS-99-00314	Argonne National Laboratory Argonne, IL D. Singh	USDOE-WSRC	
Solidification/ Stabilization					X		Na, Cu, K, Nitrate, Pesticides	Rocky Mountain Arsenal		Dispersion by Chemical Reaction Testing of Rocky Mountain Arsenal Basin F Waste Soils CRREL Special Report 97-3	SOUND/epic Anchorage, AK Richard W. McManus 214-393-6965	USACE-CRREL	
Solidification/ Stabilization					X		As, Cd, Pb	Midvale Slag Superfund Site, Midvale, UT	1997	Molecular Bonding System®, Solucorp Industries Ltd. EPA 540-R-97-507	Solucorp Saddle Brook, NJ Robert Kuhn 914-623-2333	USEPA-NRMRL	X
Solidification/ Stabilization		X		X			Asphalt Tar, JP-4	Eareckson AFS, Shemya Island, AK	1994	Dispersion by Chemical Reaction Technology to Stabilize Asphalt Tar, Eareckson Air Force Station, Shemya, Alaska CRREL Special Report 95-11	SOUND/epic Anchorage, AK Richard W. McManus 214-393-6965	USACE-CRREL	
Solidification/ Stabilization					X		Zn, Other Heavy Metals	Palmerton Zinc Smelter, Carbon County, PA	1996	Site Remediation via Dispersion by Chemical Reaction (DCR) CRREL Special Report 97-18	SOUND/epic Anchorage, AK Richard W. McManus 214-393-6965	USACE-CRREL	
Solidification/ Stabilization					X		Heavy Metal Contaminants	Hazardous Waste Landfill	1993	Field Validation of Test Methods for Solidified Waste Evaluation - Wastewater Technology Centre DESRT - Apr 95	Wastewater Technology Centre.	ETAD	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
Ex Situ Physical/Chemical													
Solidification/ Stabilization	X	X	X	X	X		Non-Specific Organics & Inorganics	Industrial Sludge Pit	1991	Wastech, Inc. (Solidification and Stabilization) EPA 540-R-94-526 (p. 146)	Wastech, Inc. P.O. Box 4638 1021 D Alvin Weinberg Drive Oak Ridge, TN 37831 423-483-6515	USEPA-NRMRL	
Solidification/ Stabilization		X	X	X	X		Metals, PCBs, Hydrocarbons	Chemical Process	1988	SolidiTech, Inc. - Solidification/ Stabilization Process EPA 540-A5-89-005	SolidiTech, Inc.	USEPA-NRMRL	
Solidification/ Stabilization					X		Heavy Metal Contaminants	Metal Contami- nated Soil Test	1988	Sulfide Stabilization Technology Process for Copper-Contami- nated Soil Demonstration Report Nov 90	Toxco Incorporated	OPPTD,	
Solidification/ Stabilization					X		Zinc, Lead, & Cadmium	Scrap Metal		A Silicate Stabilization Process for Heavy Metal Contaminated Soil at the Tamco Steel Site Demonstration Report Mar 90	Solids System Treatment, Inc.	OPPTD,	
Solidification/ Stabilization					X		Lead	Test Soil	1988	Portland Cement Stabilization Process for Lead-Contaminated Soil Demonstration Report Jun 91	Levine-Fricke, Inc.	OPPTD,	
Solidification/ Stabilization					X		Mixed Wastes & Debris: Cd, Pb, Radionulides	ORNL, Oak Ridge, TN	1997	Demonstration of Mixed Waste Debris Macroencap-sulation Using Sulfur Polymer Cement [fact sheet] www.ornl.gov/K25/ techdemo/macencp.htm	Oak Ridge National Laboratory (ORNL) Catherine Mattus 423-574-6793 h6z@ornl.gov	USDOE-ORNL	
Solidification/ Stabilization					X		Metals	Salvage Yard	1989	Chemfix Technologies, Inc.- Chemical Fixation/Stabilization EPA 540-A5-89-011	Advanced Remediation Mixing, Inc., 711 Oxley Street, Kenner, LA 70062 504-461-0466	USEPA-NRMRL	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
Ex Situ Physical/Chemical													
Solidification/ Stabilization					X		Heavy Metals (Al, Be, Cd, Fe, Zn, etc.)	Salvage Yard	1989	Chemfix Process: Solid Waste in Soil and Sludge EPA 542-B-93-009 (p 245)		USEPA-NRMRL	
Solidification/ Stabilization				X	X		PAH, HM, Cyanide	Railroad Equipment	1992	Stabilization/Solidification Project, Pacific Place Site DESRT 10 - Apr 93	Wastech, Inc. P.O. Box 4638 1021 D Alvin Weinberg Drive Oak Ridge, TN 37831 423-483-6515	ETAD	
Solidification/ Stabilization				X	X		PAH, HM, Cyanide	Railroad Equipment	1992	Stabilization/Solidification Project, Pacific Place Site DESRT 02 - Apr 93	Newalta Corporation	ETAD	
Solidification/ Stabilization				X	X		PAH, HM, Cyanide	Railroad Equipment	1992	Stabilization/Solidification Project, Pacific Place Site DESRT 03 - Apr 93	Chemical Waste Manage- ment Inc.	ETAD	
Solidification/ Stabilization					X		Lead and Copper	Port Hueneme, CA Site	1992	Solidification of Spent Blasting, Heavy Metals in Spent Blasting Abrasives, Grit, and Sands EPA 542-B-93-009 (p 252)		NFESC	
Solvated Electron Technology (SET™)			X				PCBs	Marengo, OH	1997	Solvated Electron Treatment of Chlorinated Organics [An EPA SITE Program document will be produced.]	Commodore Environmental Columbus, OH Carl Magnell 614-297-0365	USEPA-NRMRL	X
Solvated Electron Technology (SET™)			X				Pesticides	Naval Facilities Eng. Service Center, Port Hueneme, CA		Solvated Electron Treatment of Chlorinated Organics [An EPA SITE Program document will be produced.]	Commodore Environmental Columbus, OH Carl Magnell 614-297-0365	NFESC/USEPA- NRMRL	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
Ex Situ Physical/Chemical													
Solvent Extraction			X				PCBs, Dioxins	Drilling Oil Site	1991	Dehydro-Tech - Carver - Greenfield EPA 540-AR-92-002	Dehydro-Tech Corp. 6 Great Meadow Lane East Hanover, NJ 07936 201-887-2182	USEPA-NRMRL	X
Solvent Extraction	X	X	X	X			PCBs, VOCs, SVOCs	Naval Air Station North Island, San Diego, CA	1994	Solvent Extraction Technology, Terra-Kleen Response Group, Inc. EPA 540-R-94-521a	Terra-Kleen Response Group, Inc. 7321 North Hammond Ave. Oklahoma City, OK 73132 405-728-0001	USEPA-NRMRL	X
Solvent Extraction			X	X			PCBs PAHs	Grand River Test Site	1992	Resources Conservation Company - Basic Extractive Sludge Treatment (B.E.S.T.) EPA 540-AR-92-079	Resources Conservation Company 3630 Cornus Lane, Ellicott City, Maryland 21042 410-596-6066	USEPA-NRMRL	X
Solvent Extraction			X				PCBs	DOE Fernald Facility, OH	1997	Solvent Extraction [An EPA SITE Program document will be produced.]	Terra Kleen San Diego, CA Alan B. Cash 619-552-9902	USDOE/ USEPA-NRMRL	
In Situ Physical/Chemical													
Air Stripping/ Soil Vapor Extraction	X						PCE	Dry Cleaning Facilities, Hutchinson, KS	1997	"Multi-Site Comparison of Chlorinated Solvent Remediation Using Innovative Technology," Physical, Chemical, & Thermal Technologies: Remediation of Chlorinated & Recalcitrant Compounds, 1998 (p 247-252)	Burns & McDonnell 3839 Dora Wichita, KS 67213 Douglas Dreiling 316-941-3921	KS Dept. of Health & Environ., Topeka, KS Leo G. Henning lhenning@kdhe.state.ks.us	
Air Stripping	X						TCE	Savannah River Site		The Savannah River Integrated Demonstration Program MSSRC-MS-91-290	Westinghouse Savannah River Co., P.O. Box 616, Building 773-42A Aiken, SC 29802 803-725-3692	USDOE-Savannah River	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>Ex Situ Physical/Chemical</i>													
Air Stripping		X					VOCs	Savannah River Site	1990	<i>In-Situ Air Stripping Using Horizontal Wells</i> DOE/EM-0269 Apr 95	Westinghouse Savannah River Co. P.O. Box 616 Building 773-42A Aiken, SC 29802 803-725-3692	USDOE	
<i>In Situ Physical/Chemical</i>													
Chemical Oxidation	X						TCE	Kansas City Plant	1996	<i>In-Situ Chemical Oxidation Using KMnO4</i> [fact sheet] www.envnet.org/envnet/scfa/tech/ dnapl/factsheets/kmno4.htm	Oak Ridge National Laboratory Diane Gates, PI 423-576-0427	USDOE	
Chemical Oxidation	X						TCE	U.S. Army Cold Regions Research & Engineering Laboratory, Hanover, NH	1997	<i>"In Situ Oxidation of Trichloroethylene Using Potassium Permanganate. Part 2: Pilot Study," in Physical, Chemical, & Thermal Technologies: Remediation of Chlorinated & Recalcitrant Compounds, 1998</i>	U.S. Army CRREL 72 Lyme Rd. Hanover, NH 03755 Daniel McKay 603-646-4738 dcmkay@crrel.usace.army.mil	U.S. Army-CRREL	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Chemical Oxidation	X	X					VOCs	Site X-231B, Portsmouth Gaseous Diffusion Plant, Piketon, OH	1993	<i>In Situ Chemical Treatment: Technology Evaluation Report GWRAC TE-99-01 (p 34)</i>	Colorado School of Mines Golden, CO Dr. Robert L. Siegrist 303-273-3490 rsiegris@slate.mines.edu	USDOE-ORNL	
Chemical Oxidation	X						TCE, DCE	Kansas City Plant, Kansas City, MO	1996	"Performance of In Situ Chemical Oxidation Field Demonstrations at DOE Sites," <i>In Situ Remediation of the Geoenvironment Conference, 1997</i>	Allied Signal 2000 E. 95 th St. Kansas City, MO 64131 Joe Baker 816-997-7332 jbaker@kcp.com	USDOE-ORNL	
Chemical Oxidation (SOLTEC™)		X	X	X			BTEX, PCBs, PAHs	Excavated Soils Contaminated w/ Transformer Oil		"In-Situ Application of Oxidation Process Shrinks Contaminated Area at Quebec Site," in <i>HazTECH News</i> , 12:6, 27 March 1997	Tecosol Inc. Ste. Julie, Quebec Pierre Dufresne 514-922-1206 Alcan	Env. Canada/ Ministere de l'Environnement et de la Faune du Quebec	
Chemical Oxidation		X					BTEX, MTBE	Warehouse, Union County, NJ	1996	"In-Situ Fenton-Like Oxidation of Volatile Organics: Laboratory, Pilot, and Full-Scale Demonstra- tions," <i>Remediation</i> , Spring 1998, (p 29-42)	Washington State Univer- sity Pullman, WA Prof. Richard Watts 509-335-3761 rjwatts@wsu.edu		
Chemical Oxidation		X					BTEX	Former Sign Manufacturing Facility, Denver, CO	1996	<i>Field Applications of In Situ Remediation Technologies: Chemical Oxidation EPA 542-R-98-008 (p 4)</i>	EWMA of Colorado 7600 Arapahoe Rd., Ste. 114 Englewood, CO 80112 Andrew Schmeising 303-843-9700 ewmadenver@aol.com		

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Chemical Oxidation	X						TCE	Portsmouth Gaseous Diffusion Plant, Piketon, OH	1997	<i>A Full-Scale Demonstration of In Situ Chemical Oxidation through Recirculation at the X-701B Site</i> ORNL/TM-13556	Colorado School of Mines Golden, CO Dr. Robert L. Siegrist 303-273-3490 rsiegris@slate.mines.edu	USDOE-ORNL	
Chemical Oxidation	X						TCE, PCE	Westinghouse Savannah River Site, Aiken, SC	1997	<i>Final Report for Demonstration of In Situ Oxidation of DNAPL Using the Geo-Cleanse Technology</i> WSRC-TR-97-00283	Westinghouse Savannah River Co. Aiken, SC Karen M. Jerome 803-725-5223 karen.jerome@srs.gov	USDOE-WSRC	
Chemical Oxidation (CleanOX®)	X						TCA	Active Industrial Facility, Clifton, NJ	1996	<i>Field Applications of In Situ Remediation Technologies: Chemical Oxidation</i> EPA 542-R-98-008 (p 8)	H2M 555 Preakness Ave. Totowa, NJ 07512 Michael Tumulty 973-942-0700 tumulty@h2m.com		
Chemical Oxidation	X						TCE, PCE	Canadian Forces Base Borden, Ontario, Can	1997	<i>Field Applications of In Situ Remediation Technologies: Chemical Oxidation</i> EPA 542-R-98-008 (p 13)	University of Waterloo Waterloo, Ontario Dr. Neil Thomson 519-885-1211 ext. 2111 nthomson@uwaterloo.ca	Center for Excellence, Ontario Canada	
Chemical Oxidation	X	X					TCE, Petroleum Hydrocarbons	Anniston Army Depot, AL	1996	"Rapid Delivery System Completes Oxidation Picture: Remediation of Chlorinated Solvents at Two Government Sites..." <i>Soil & Groundwater Cleanup Online</i> www.sgcleanup.com	QST Environmental Gainesville, FL R.S. Levin Geo-Cleanse International, Inc. Kenilworth, NJ J. Wilson	USACE	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Chemical Oxidation (CleanOX®)	X						DCE, TCA, VC	Former News Printing Facility, Framingham, MA	1996	<i>Field Applications of In Situ Remediation Technologies: Chemical Oxidation</i> EPA 542-R-98-008 (p 7)	TGG Environmental, Inc. 100 Crescent Rd. Needham, MA 02494 Carl Shapiro 781-449-6450		
Chemical Oxidation			X	X			PCP, PAHs	Former Industrial Facility, Sonoma, CA	1998	<i>Field Applications of In Situ Remediation Technologies: Chemical Oxidation</i> EPA 542-R-98-008 (p 22)	Fluor Daniel GTI, Inc. 1527 Cole Blvd. Golden, CO 80401 Christopher Nelson 303-231-8912 cnelson@gtionline.com		
Containment	X	X	X	X	X	X	Any Hazardous/ Radioactive Waste	WAG-9, ORNL, Oak Ridge, TN	1998	"Frozen Soil Barrier Success," <i>SCFA News, 3rd Quarter 1998</i>	Arctic Foundations, Inc. Anchorage, AK Ed Yarmak 907-562-2741	USDOE Plumes Focus Area Program	
Containment	X	X	X	X	X	X	Any Hazardous/ Radioactive Waste	Brookhaven National Laboratory	1997	<i>Viscous Liquid Barrier</i> [fact sheet] www.envnet.org/envnet/scfa/tech/stcr/factsheets/visliq.htm	Lawrence Berkeley Laboratory Karsten Pruess or George Moridis, 510-486-6732 Mountain States Energy Andrea Hart, 406-494-7410	USDOE/TX A&M University/U of CA, Berkeley/Dupont	
Containment/ Phytoremediation (Vegetative Cap)							Landfills, Surface Impoundments	Rocky Mountain Arsenal		"RCRA Equivalent Cover Demonstration Project," <i>Remediation Activities Summary, August 12, 1999</i>	Rocky Mountain Arsenal Remediation Venture Office (RVO) 303-289-0136	U.S. Army	
Containment (Evapotranspiration Cover)							(Cold Test Demo)	Kirtland AFB, Albuquerque, NM	Open	"DOE Comparison of Landfill Cover Designs," <i>Tech Trends</i> , May 1999	Sandia National Laboratories Stephen Dwyer 505-844-0595 sfdwyer@sandia.gov	USDOE/USAF	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Containment (Anisotropic Barrier)							(Cold Test Demo)	Kirtland AFB, Albuquerque, NM	Open	"DOE Comparison of Landfill Cover Designs," <i>Tech Trends</i> , May 1999	Sandia National Laboratories Stephen Dwyer 505-844-0595 sfdwyer@sandia.gov	USDOE/USAF	
Containment (Capillary Barrier)							(Cold Test Demo)	Kirtland AFB, Albuquerque, NM	Open	"DOE Comparison of Landfill Cover Designs," <i>Tech Trends</i> , May 1999	Sandia National Laboratories Stephen Dwyer 505-844-0595 sfdwyer@sandia.gov	USDOE/USAF	
Containment	X	X	X	X	X	X	Any Hazardous/ Radioactive Waste	Los Banos, CA	1995	<i>Subsurface Contaminants Focus Area, Viscous Liquid Barrier Technology Project FY1998: Year End Review</i> www.envnet.org/envnet/scfa/conferences/presentat98/slides/ahart2/tsld001.htm	Mountain States Energy (MSE) Andrea Hart, PI 406-494-7410	USDOE-LBNL	
Containment (Capillary Barrier)	X	X	X	X	X	X	Landfills, Surface Impoundments, Waste Piles, Mine Tailings	Lee Acres Landfill, Farmington, NM	1997	<i>Capillary Barriers: Alternative Landfill Covers Demonstration Project</i> [fact sheet] www.envnet.org/envnet/scfa/tech/stcr/factsheets/capill.htm	Westinghouse Savannah River Scott McMullin scott.mcmullin@srs.gov 803-725-9596 Sandia National Laboratory Ray Finley, PI refinle@sandia.gov 505-848-0776	USDOE/ Bureau of Land Mgmt.	
Containment	X	X	X	X	X	X	Any Hazardous/ Radioactive Waste	SEG Facilities, Oak Ridge, TN	1994	"Frozen Soil Barrier Technology...", <i>Remediation Case Studies, V. 6: Soil Vapor Extraction and Other In Situ Technologies</i> EPA 542-R-97-009 (p 216-230)	Scientific Ecology Group (SEG) Oak Ridge, TN Ray Peters 423-376-8194	USDOE Plumes Focus Area Program	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Deep Soil Mixing/ Chemical Oxidation	X						TCE, 1,2-DCE	DOE Kansas City Plant, Kansas City, MO	1996	<i>Implementation of Deep Soil Mixing at the Kansas City Plant</i> ORNL/TM-13532	AlliedSignal, Inc. Kansas City, MO Oak Ridge National Lab./ Grand Junction, CO N. Korte	USDOE-ORNL	
Drilling Innovation							N/A	Remediation Well Installation, M-Area Settling Basin, SRS	1993	<i>Horizontal Wells</i> DOE/EM-0378	Westinghouse Savannah River Co. Aiken, SC Jim Wright 803-725-5608 wrightjamesb@srs.gov	USDOE Subsurface Contaminants Focus Area	
Drilling Innovation							N/A	Remediation Well Installation, DOE Pantex Plant, TX	1994	"ResonantSonic Drilling...", <i>Remediation Case Studies, V. 6: Soil Vapor Extraction and Other In Situ Technologies</i> EPA 542-R-97-009 (p 234-255)	Water Development Corp. Jeffrey Barrow 916-662-2829 DOE Plumes Focus Area Manager Jim Wright 803-725-5608	USDOE Plumes Focus Area Program	
Drilling Innovation							N/A	Sandia Directional Boring Test Range, NM	1995	<i>Horizontal Wells</i> DOE/EM-0378	Colorado Center for Env. Mgmt. Dawn Kaback 303-297-0180 ext. 111 dsdaback@csn.net	USDOE Subsurface Contaminants Focus Area	
Drilling Innovation							N/A	Lawrence Berkeley National Laboratory, CA	1994	<i>Cryogenic Drilling</i> DOE/EM-0382	University of California Berkeley, CA Dr. George Cooper 510-642-2996 gcooper@socrates.Berkeley.edu	USDOE Subsurface Contaminants Focus Area	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Drilling Innovation							N/A	Remediation Well Installation, Hanford Reservation, WA	1994	"ResonantSonic Drilling...", <i>Remediation Case Studies, V. 6: Soil Vapor Extraction and Other In Situ Technologies</i> EPA 542-R-97-009 (p 234-255)	Water Development Corp. Jeffrey Barrow 916-662-2829 Westinghouse Hanford Company Don Moak 509-373-7219 Greg McLellan 509-373-7539	USDOE Plumes Focus Area Program	
Drilling Innovation							N/A	Remediation Well Installation, Sandia National Lab., NM	1993	"ResonantSonic Drilling...", <i>Remediation Case Studies, V. 6: Soil Vapor Extraction and Other In Situ Technologies</i> EPA 542-R-97-009 (p 234-255)	Water Development Corp. Jeffrey Barrow 916-662-2829 Sandia National Laboratory Jack Wise 505-844-6359	USDOE Plumes Focus Area Program	
Drilling Innovation							N/A	Aerojet Site, Rancho Cordova, CA	1996	<i>Cryogenic Drilling</i> DOE/EM-0382	University of California Berkeley, CA Dr. George Cooper 510-642-2996 gcooper@socrates.Berkeley.edu	USDOE Subsurface Contaminants Focus Area	
Electrokinetics					X		Cr	Camp Stanley Storage Activity Area, San Antonio, TX	1996	<i>Resource Guide for Electrokinetics Laboratory & Field Processes Applicable to Radioactive & Hazardous Mixed Wastes in Soil & Groundwater</i> EPA 402-R-97-006 (p 60)	Lynntech, Inc. College Station, TX Dr. Tom Rogers 409-693-0017 Parsons Engineering	U.S. Army/ Parsons Eng.	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Electrokinetics					X		Mercuric Nitrate	Old TNX Basin, Savannah River Site, Aiken, NC	1995	<i>Resource Guide for Electrokinetics Laboratory & Field Processes Applicable to Radioactive & Hazardous Mixed Wastes in Soil & Groundwater</i> EPA 402-R-97-006 (p 25)	Isotron Corporation New Orleans, LA Henry Lomasney 504-254-4624	USDOE-OST	
Electrokinetics					X		Cr(VI)	SNL Unlined Chromic Acid Pit, Albuquerque, NM	1996	<i>Electrokinetic Demonstration at the Unlined Chromic Acid Pit</i> SAND97-2592	Sandia National Laboratories Albuquerque, NM Dr. Eric R. Lindgren 505-844-3820 erlindg@sandia.gov	USDOE/ USEPA-NRMRL	
Electrokinetics					X		U	East TN Technology Park (ETTP), Oak Ridge, TN	1995	In Situ Electrokinetic Extraction System EPA 540-R-97-509 <i>Electrokinetic Decontamination</i> [for Removing Uranium Contamination from Concrete and Soil] www.ornl.gov/K25/techdemo/electro.htm	Oak Ridge National Laboratory Jerry Harness 423-576-6008 HarnessJL@oro.doe.gov [Vendor: Isotron Corporation]	USDOE-ORNL	
Electrokinetics		X		X			BTEX (gasoline contaminants)	Oil and Gas Field Services, NEC	1994	<i>An Underground Storage Tank Spill, Environment & Technology Services, Electrokinetic Enhancement</i> EPA 542-K-94-007 (p. 7)	Environment & Technology Services 2081 15 th Street, San Francisco, CA 94114 415-861-0810	E&TS	
Electrokinetics					X		Heavy Metals	Tidal Marsh Waste Pits, Point Mugu, CA	Open	<i>Evaluation of In Situ Electrokinetic Remediation for Metal Contaminated Soils</i> [fact sheet] www.estcp.org/projects/cleanup/remediation/199605o.htm	Lynntech, Inc., College Station, TX Dr. Tom Rogers 409-693-0017 Aberdeen Proving Ground Contact: Gene L. Fabian 410-436-6847 glfabian@aec2.apgea.army.mil	ESTCP	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Electrokinetics			X				Dioxin	Elgin AFB, FL	1997	"Electrokinetic, Fenton's Reaction Technologies Being Commercialized," in <i>HazTECH News</i> , 12:18/19, 11/25 Sep 1997	Lynntech, Inc., College Station, TX G. D. Hitchens 409-693-0017	USAF	
Electrokinetics					X		Heavy Metals	Radford Army Ammunition Plant, VA	1997	<i>Resource Guide for Electrokinetics Laboratory & Field Processes Applicable to Radioactive & Hazardous Mixed Wastes in Soil & Groundwater</i> ...EPA 402-R-97-006 (p 56)	Lynntech, Inc. College Station, TX Dr. Tom Rogers 409-693-0017	U.S. Army-RAAP	
Electrokinetics					X		Heavy Metals	Naval Facility Pearl Harbor, HI	1999	Electrokinetics [An EPA SITE Program document will be produced.]	Geokinetics Stephen R. Clark 510-704-2940 EPA NRMRL Jack Hubbard 513-569-7507	USEPA-NRMRL	
Electrokinetics					X		U	East TN Technology Park (ETTP), Oak Ridge, TN	1994	<i>Electrokinetic Decontamination</i> [for Removing Uranium Contamination from Concrete and Soil] www.ornl.gov/K25/techdemo/electro.htm	Oak Ridge National Laboratory Jerry Harness 423-576-6008 HarnessJL@oro.doe.gov [Vendor: Isotron Corporation]	USDOE-ORNL	
Electrokinetics					X		Pb	Fort Polk, LA	Open	Electrokinetic Extraction	Electrokinetics, Inc. Baton Rouge, LA Elif Acar 504-388-3992 EPA-NRMRL Randy Parker 513-569-7271	USEPA-NRMRL	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Electrokinetics	X						Chlorinated Solvents	Kennedy Space Flight Center, Cape Canaveral, FL	1998	Resource Guide for Electrokinetics Laboratory & Field Processes Applicable to Radioactive & Hazardous Mixed Wastes in Soil & Groundwater... EPA 402-R-97-006 (p 59)	Lynnntech, Inc. College Station, TX Dr. Tom Rogers 409-693-0017	NASA-SBIR	
Gaseous Reduction					X		Dimethyl Nitrosamine, Cr(VI)	White Sands Missile Range, NM	1998	"In Situ Gaseous Reduction System (TMS #123)," <i>Highlights of FY 1998 Achievements</i> www.envnet.org/envnet/scfa/rep%2Dpub/annrep98/fy98.htm	DOE-Idaho David Robertson 208-526-4953 robertdw@id.doe.gov Pacific Northwest National Lab. Edward C. Thornton, PI 509-376-6107	USDOE-PNNL	
High Vacuum Extraction	X	X					VOCs	DOE Mound Facility, Miamisburg, OH	1997	Demonstrated High Vacuum Extraction... www.ohio.doe.gov/oh-stcg	DOE Ohio Sites Technology Coordination Group (STCG) James Johnson 937-847-5234 james.o.johnson@em.doe.gov	USDOE-Ohio STCG	
Hydraulic Fracturing		X					TPH	Denver Federal Center, CO	1996	"Bioremediation Barrier Emplaced through Hydraulic Fracturing," <i>Ground Water Currents</i> , March 1999	FOREMOST Solutions, Inc. Seth Hunt 303-271-9114 EPA Region 8 Sandra Stavnes stavens.sandra@epa.gov	USEPA/GSA/ State of CO	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Hydraulic Fracturing/Soil Heating			X	X			SVOCs, JP-8 Jet Fuel	Robert Gray Army Airfield, Fort Hood, TX	1997	<i>Remediation of Tight Soils: Hydraulic Fracture, Steam & Electro-Heating.</i> AATDF TR-98-12 & TR-98-14	Fluor Daniel GTI Irvine, CA Jay Dablow Rice University, Houston, TX, AATDF Kathy Balshaw-Biddle Fax: 713-285-5948	USAEC	
Hydraulic Fracturing/Bioremediation		X					TPH, BTEX	Fuel Spill Site, Dayton, OH	1992	<i>Hydraulic Fracturing Technology, University of Cincinnati/ Risk Reduction Engineering Laboratory</i> EPA 540-R-93-505	FRX Inc. P.O. Box 37945 Cincinnati, OH 45223 513-556-2526	USEPA-NRMRL	
Hydraulic Fracturing/Soil Vapor Extraction	X	X					VOCs & SVOCs	Xerox Oak Brook Site, IL	1992	<i>Hydraulic Fracturing Technology, University of Cincinnati/ Risk Reduction Engineering Laboratory</i> EPA 540-R-93-505	FRX, Inc. P.O. Box 37945 Cincinnati, OH 45223 513-556-2526	USEPA-NRMRL	
Immobilization					X		Heavy Metals	Oil Processing	1987	<i>Funderburk & Associates (Dechlorination & Immobilization)</i> EPA 540-AR-89-001	Funderburk & Associates Route 1, Box 250 Oakwood, Texas 75855 800-227-6543	USEPA-NRMRL	
Lasagna™	X						TCE	Paducah Gaseous Diffusion Plant, KY	1997	<i>Development of an Integrated In-Situ Remediation Technology: Draft Topical Report for Task #7.2 Entitled "Field Scale Test"</i> DOE/OR/22459-T3	Monsanto Company DuPont General Electric	USDOE	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Physical Separation/Acid Leaching (Acetic Acid)					X		Pb	Firing Range, Fort Polk, LA	1996	<i>Technology Application Analysis: Physical Separation and Acid Leaching</i> ADA341447	USAEC SFIM-AEC-ETD Building E4430 Aberdeen Proving Ground, MD 21010-5401 Terri Bright 410- 436-6848 tabright@aec.apgea.army.mil	USAEC	
Physical Separation/Acid Leaching (Hydrochloric Acid)					X		Pb	Firing Range, Fort Polk, LA	1996	<i>Demonstration of Physical Separation/Leaching Methods for the Remediation of Heavy Metals Contaminated Soils at Small Arms Ranges (Acid Leaching Demo)</i> SFIM-AEC-ET-CR-97048	USAEC SFIM-AEC-ETD Building E4430 Aberdeen Proving Ground, MD 21010-5401 Terri Bright 410- 436-6848 tabright@aec.apgea.army.mil	USAEC	
Pneumatic Fracturing Extraction	X						TCA	Abandoned Tank Farm, Richmond, VA		<i>Accutech Pneumatic Fracturing Extraction & Hot Gas Injection.</i> Appendix D-3 EPA 540-AR-93-509	Accutech Remedial Systems, Inc. Cass Street at Highway 35 Keyport, NJ 07735 908-739-6444		
Pneumatic Fracturing Extraction	X	X	X	X			VOCs and SVOCs	NJ EECR Act Site, Somerville, NJ	1992	<i>Accutech Pneumatic Fracturing Extraction and Hot Gas Injection, Phase I</i> EPA 540-AR-93-509	Accutech Remedial Systems, Inc. Cass Street at Highway 35 Keyport, NJ 07735 908-739-6444	USEPA-NRMRL	X
Pneumatic Fracturing Extraction	X	X	X	X			VOCs and SVOCs	Airfield, Hillsborough, NJ	1993	<i>Pneumatic Fracturing Demonstration, Tinker Air Force Base, Oklahoma City, Oklahoma</i> Abstract	Accutech Remedial Systems, Inc. Cass Street at Highway 35 Keyport, NJ 07735 908-739-6444	CEE&S	X

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Soil Fracturing	X	X					NAPLs, DNAPLs	X-231A Site, Portsmouth Gaseous Diffusion Plant, OH	1998	<i>X-231A: A Demonstration of In-Situ Remediation of DNAPL Compounds in Low Permeability Media by Soil Fracturing with Thermally Enhanced Mass Recovery or Reactive Barrier Destruction: Dense Non-Aqueous Phase Liquids</i> ORNL/TM-13534	L.D. Murdoch FRx, Inc. Cincinnati, OH 513-556-2526 ORNL/Colorado School of Mines R.L. Siegrist rsiegris@mines.edu	USDOE Subsurface Contaminants Focus Area	
Soil Mixing	X						TCE, TCA, DCE	Site X-231B, Portsmouth Gaseous Diffusion Plant, Piketon, OH	1992	<i>"In Situ Enhanced Soil Mixing..." Remediation Case Studies, V. 6: Soil Vapor Extraction and Other In Situ Technologies</i> EPA 542-R-97-009 (p 112-138)	Millgard Jim Brannigan 313-261-9760 Geo-Con Steve Day 916-858-0480	USDOE/Ohio EPA	
Soil Mixing Enhanced w/ Steam/SVE/ Bioremediation/ Zero-Valent Iron	X						TCE, CT, Chloroform, 1,2-DCE	Argonne National Laboratory, Chicago, IL	1998	<i>Technology Demonstration Summary: Optimization of Enhanced Soil Mixing by Zero-Valent Iron Addition</i> [fact sheet]	Argonne National Laboratory- East, Larry Moos, 630- 252-3455 USDOE, Chicago Operations Office, Yvette Collazo 630-252-2102	USDOE-ANL	
Soil Vacuum Extraction/Air Sparging (SVE/AS)		X					BTEX	Former Retail Gasoline UST Site, DE	1996	<i>"Delaware Tackles UST Sites with Mobile Remediation System," Soil & Groundwater Cleanup Online</i> www.sgcleanup.com	Delaware Department of Natural Resources, Underground Storage Tank Branch (USTB) Matt Lesley	DE DNR-USTB	
Soil Vacuum Extraction/Air Sparging (SVE/ AS) in Horizontal Wells		X					BTEX	Former Gasoline Station Near Waples Pond, DE	Open	<i>"Delaware Tackles UST Sites with Mobile Remediation System," Soil & Groundwater Cleanup Online</i> www.sgcleanup.com	Delaware Department of Natural Resources, Underground Storage Tank Branch (USTB) Matt Lesley, U.S. Filter/ SCHUMACHER Filters America Inc., Asheville, NC	DE DNR-USTB	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Soil Vapor Extraction/ Bioventing		X		X			PAHs, BTEX	Strachan Gas Plant, Canada	1994	"Cold Climate Soil Bioventing," <i>Tech Trends</i> , Mar 1995	GASReP Alex Lye, Manager 905-336-6438	USDOE/ Canadian Ass. of Petroleum Producers (CAPP)/ Govt. of Canada	
Soil Vapor Extraction	X						DCE, PCA, PCE, TCE	Storage Tanks	1994	<i>SVE System at Commencement Bay, South Tacoma Channel (Well 12A), Phase 2, Tacoma, WA</i> EPA 542-R-95-001 (p 62)	Environmental Science & Engineering, Inc.	USACE	
Soil Vapor Extraction (Passive)	X		X				Chlorinated Solvents	Three DOE Test Sites	1993	<i>Passive Soil Vapor Extraction</i> DOE/EM-0248 - Jun 95 (p 136)	Lawrence Livermore National Lab. 7000 East Ave. P.O. Box 808 Livermore, CA 94550 510-422-6806	USDOE-LLNL	
Soil Vapor Extraction		X		X			TPH, BTEX, MEK	Fire Training Area, Airfield	1992	<i>Soil Vapor Extraction at, North Fire Training Area (NFTA), Luke AFB, Arizona</i> EPA 542-R-95-001 (p 70)	Enviricon, Inc.; Rust Environment	USACE	
Soil Vapor Extraction (ICE/ SVE)		X					Total Volatile Hydrocarbons (TVH)	Williams AFB, AZ		"The Internal Combustion Engine as a Low-Cost Soil Vapor Treatment Technology," <i>Third Tri-Service Environmental Technology Workshop</i> , 1998	AFCEE/ERT Brooks AFB Jim Gonzalez 210-536-4324	AFCEE-ERT	
Soil Vapor Extraction		X		X			JP-5 Jet Fuel	Airfield	1994	<i>Naval Air Station, Lemoore, California, SIVE, Naval Facilities Engineering Service Center</i> EPA 542-K-94-009 (p 17)	Berkeley Environmental Restoration Kent Udell 510-653-9477 OHM, Inc.	NFESC	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Soil Vapor Extraction	X						Chloroform, TCE, PCA, TCA	Spill: Contaminated Aquifer	1993	<i>SVE at Hastings Groundwater Contamination Superfund Site, Well #3 Subsite, Hastings, NE</i> EPA 542-R-95-001 (p 66)	Morrison-Knudsen Corporation, 7100 East Belleview Ave., Suite 300 Englewood, CO 80111 303-793-5089	USEPA Region 7	
Soil Vapor Extraction		X					BTEX	Underground Storage Tanks	1993	<i>SVE at the Sacramento Army Depot Superfund Site, Tank 2 Operable Unit, Sacramento CA</i> EPA 542-R-95-001 (p 76)	Terra Vac Corporation 14798 Wicks Boulevard San Leandro, CA 94577 510-351-8900	U.S. Army EMD	X
Soil Vapor Extraction	X	X					PCE, LNAPL	Disposal Storage Area	1992	<i>SVE at Verona, Well Field Superfund Site, Thomas Solvent Raymond Road (OU-1) Battle Creek, MI</i> EPA 542-R-95-001 (p 80)	Terra Vac Corporation 9030 Secor Road Temperance, MI 48182 313-847-4444	USEPA Region 5	X
Soil Vapor Extraction		X		X			VOC, SVOC	Underground Storage Tanks	1993	<i>Soil Vapor Extraction at the SMS Instruments Superfund Site, Deer Park, New York</i> EPA 542-R-95-001 (p 78)	Four Seasons Environmental, Inc. 3107 S. Elm Street Greensboro, N.C 27416 919-273-2718	USEPA Region 2	
Soil Vapor Extraction		X		X			TPH, JP-4	Airfield	1990	<i>SVE and Bioventing for Remediation of a JP-4 Fuel Spill at site 914, Hill Air Force Base, Ogden UT</i> EPA 542-R-95-001 (p 68)		USAF	
Soil Vapor Extraction/ Bioventing		X		X			TPH	Airfield	1990	<i>SVE and Bioventing for Remediation of a JP-4 Fuel Spill at Site 914, Hill AFB, Ogden, UT</i> EPA 542-R-95-001		USAF	
Soil Vapor Extraction	X				X		Freon-113, DCE, TCA, PCE, TCE	Disposal Pit	1994	<i>In Situ Soil Vapor Extraction at McClellan Air Force Base, California</i> EPA 542-R-95-001 (p 72)	CH2M Hill	USAF, EMD	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Soil Vapor Extraction/ Combustion		X		X			Non-halogenated VOCs	Gas Station	1993	<i>Performance/Cost Evaluation of Internal Combustion Engines for the Destruction of Hydrocarbon Vapors</i> Performance Report - Dec 94	VR Systems, Inc., Anaheim, California 714-826-0483	AFCEE	
Soil Vapor Extraction (ICE/ SVE)		X					Total Volatile Hydrocarbons (TVH)	Luke AFB, AZ		"The Internal Combustion Engine As a Low-Cost Soil Vapor Treatment Technology," <i>Third Tri-Service Environmental Technology Workshop</i> , 1998	AFCEE/ERT Brooks AFB Jim Gonzalez 210-536-4324 jamesgonzales@hq.afceebrooks.af.mil	AFCEE-ERT	
Soil Vapor Extraction	X	X			X		VOCs, Heavy Metals, Solvents	Industrial Waste Dump	1993	<i>Basket Creek Surface Impoundment</i> EPA 542-R-95-006 (p 29)		USEPA Region 4	
Soil Vapor Extraction	X						TCE	Repair Shop	1991	<i>Soil Vapor Extraction at the Rocky Mountain Arsenal Superfund Site, Motor Pool Area (OU-18)</i> EPA 542-R-95-001 (p 74)	Woodward-Clyde Federal Services 4582 S.Ulster St., Suite 1200 Denver, CO 80237, 303-740-2600	U.S. Army RMA	
Soil Vapor Extraction (ICE/ SVE)		X					Total Volatile Hydrocarbons (TVH)	Davis-Monthan AFB, AZ		"The Internal Combustion Engine as a Low-Cost Soil Vapor Treatment Technology," <i>Third Tri-Service Environmental Technology Workshop</i> , 1998	AFCEE/ERT Brooks AFB Jim Gonzalez 210-536-4324	AFCEE-ERT	
Soil Vapor Extraction (ICE/ SVE)		X					Total Volatile Hydrocarbons (TVH)	Bolling AFB, DC		"The Internal Combustion Engine as a Low-Cost Soil Vapor Treatment Technology," <i>Third Tri-Service Environmental Technology Workshop</i> , 1998	AFCEE/ERT Brooks AFB Jim Gonzalez 210-536-4324	AFCEE-ERT	
Soil Vapor Extraction	X				X		TCA, DCE, PCE, Freon-113, Acetone	Underground Storage Tanks	1990	<i>Soil Vapor Extraction at the Fairchild Semiconductor Corporation Superfund Site</i> EPA 542-R-95-001 (p 64)	Canonie Environmental Services Corp. 441 N. Whisman Rd. Mountain View, CA 94043 415-960-1640	USEPA Region 9	X

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Soil Vapor Extraction		X		X			Gasoline	Lawrence Livermore Lab		<i>Vacuum-Induced Soil Venting</i> EPA 542-B-93-009 (p 144)	Lawrence Livermore Lab Univ. Of California P.O. Box 808 Livermore, CA 94550 510-422-3521	USDOE-LLNL	
Soil Vapor Extraction		X		X			Diesel Fuel	Huntington Beach, CA	1993	<i>Steam-Enhanced Recovery Process</i> EPA 542-B-93-009 (p 139)	Hughes Environmental Systems Inc., 1240 Rosecrans Ave. Manhattan Beach, CA 90266, 714-375-6446	USEPA-NRMRL	
Soil Vapor Extraction/ Steam Vacuum Stripping	X	X	X	X			VOCs, TCE	Aeronautical	1990	<i>AWD Technologies, Inc. - Integrated Vapor Extraction and Steam Vacuum Stripping</i> EPA 540-A5-91-002	AWD Technologies, Inc. 49 Stevenson Street, Suite 600 San Francisco, CA 94105 415-227-0842	USEPA-NRMRL	X
Soil Vapor Extraction	X						TCE	Groveland Wells, MA Site	1988	<i>Terra Vac - Vacuum Extraction</i> EPA 540-A5-89-003	Terra Vac Corporation 356 Fortaleza Street P.O. Box 1591 San Juan, PR 00903 809-723-9171	USEPA-NRMRL	X
Soil Vapor Extraction		X					JP-4 Jet Fuel	Fire Training Area, Luke AFB	1992	<i>Soil Vapor Extraction (SVE)</i> EPA 542-B-93-009 (p 138)		USACE	
Soil Vapor Extraction	X	X					Fuels, PCE, VOCs	Sacramento Army Depot, CA	1993	<i>Vapor Extraction System</i> EPA 542-B-93-009 (p 145)	Terra Vac Corporation 14204 Doolittle Dr San Leandro, CA 94577 510-351-8900	U.S. Army, Sacramento	X
Soil Venting/ Vapor Extraction	X	X					Volatile Contaminants	Ammo Site	1993	<i>In Situ Soil Venting</i> EPA 542-B-93-009 (p 126)		USAEC	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Soil Venting/ Vapor Extraction	X						Fuels, TCE	Hill Air Force Base, Utah	1989	<i>In Situ Soil Venting</i> EPA 542-B-93-009 (p 124)		USAF-Armstrong Laboratory	
Solidification/ Stabilization		X		X	X		PAH, Keytones, Glycols	Industrial	1993	<i>Solidification/Stabilization w/ Silicate Compounds, Organics & Inorganics in Groundwater, Soil, Sludge</i> EPA 542-B-93-009 (p 255)		USEPA-NRMRL	
Solidification/ Stabilization		X		X			Lubricating Oil, Aromatic Solvents	Robins Air Force Base, Macon, GA	1991	<i>Solidification/Stabilization, Organics and Inorganics in Soil, Sludge, and Liquid</i> EPA 542-B-93-009 (p 253)		USEPA-NRMRL	
Solidification/ Stabilization					X		Pu, Am	INEEL	1996	<i>Innovative Grouting and Retrieval</i> DOE/EM-0380	Idaho National Engineering and Environmental Laboratory G.G. Loomis 208-526-9208 guy@inel.gov	USDOE Subsurface Contaminants Focus Area	
Solidification/ Stabilization					X		Pb	Pottery Sites, Roseville/ Crooksville, OH	1998	Envirobond Soil Amendment [An EPA SITE Program document will be produced.]	Rocky Mountain Remediation Services Jim Barthel 303-215-6620	USEPA-NRMRL	
Solidification/ Stabilization					X		Pu, Am	INEEL	1995	<i>Innovative Subsurface Stabiliza- tion Project. Final Report</i> INEL-96-0439	Idaho National Engineering and Environmental Laboratory G.G. Loomis 208-526-9208 guy@inel.gov	USDOE Subsurface Contaminants Focus Area	
Solidification/ Stabilization					X		Mining Wastes, Metals	Mike Horse Mine, MT	1996	Grouting Technique [An EPA SITE Program document will be produced.]	STG Technologies EPA-NRMRL Jack Hubbard 513-569-7507	USEPA-NRMRL	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Solidification/ Stabilization					X		Pb	Pottery Sites, Roseville/ Crooksville, OH	1998	Injection Soil Amendment (Stabilization) [An EPA SITE Program document will be produced.]	Star Organics Phil Clarke 214-522-0742	USEPA-NRMRL	
Solidification/ Stabilization				X	X		PAH, HM, Cyanide	Railroad Equipment	1992	<i>Stabilization/Solidification Project, Pacific Place Site</i> DESRT 11 - Apr 93	Bovar Environmental Services	ETAD	
Solidification/ Stabilization			X		X		Metals, PCBs	Electrical	1988	<i>WT/Geo-Con, Inc., In-Situ Stabilization</i> EPA 540-A5-89-004	Geo-Con, Inc. 4075 Monroeville Blvd. Monroeville, PA 15146 412-856-7700	USEPA-NRMRL	
Solidification/ Stabilization				X			DNAPL	Wood Preserving	1991	<i>Gravel Washing Project - Canada Creosote Site</i> DESRT 12 - Dec 93	Alberta Research Council Alberta, Canada 405-427-6181	ETAD	
Solidification/ Stabilization				X	X		PAH, HM, Cyanide	Railroad Equipment	1992	<i>Stabilization/Solidification Project, Pacific Place Site</i> DESRT 08 - Apr 93	Ogden/Chemfix Technologies, Inc.	ETAD	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>Ex Situ Thermal</i>													
Advanced Electric Reactor			X				Herbicide Orange, 2,3,7,8-TCDD, and Other Dioxins	Naval Construction Battalion Center, Gulfport, MS	1985	<i>High-Temperature Fluid-Wall Reactor Technology Research, Test and Evaluation Performed at Naval Construction Battalion Center, Gulfport, Mississippi</i> AFESC/ESL-TR-87-06, 2 vols.	J.M. Huber Co. Edison, NJ 732-549-8600 EG&G, Inc. Idaho Falls, ID R.W. Helsel; R.W. Thomas	USAF Installation Restoration Program	
Chemical Reduction			X	X			PCBs, PAHs, Dioxins	Middleground Landfill, Bay City, MI	1992	<i>Eco Logic International Gas-Phase Chemical Reduction Process--The Reactor System</i> EPA 540-AR-93-522	ELI Eco Logic International Inc. 143 Dennis Street Rockwood, Ontario, Canada, NOB 2KO 519-856-9591	USEPA-NRMRL	X
Flame Reactor					X		Metals	Smelting Site	1991	<i>Horsehead Resource Development Co., Inc., Flame Reactor</i> EPA 540-A5-91-005	Horsehead Resource Development Co., Inc., 300 Frankfort Monaca, PA 15061 415-773-2289	USEPA-NRMRL	X
Hot Air Vapor Extraction				X			Petroleum Hydrocarbons	Advanced Fuel Hydrocarbon National Test Site, Port Hueneme, CA	1995	<i>D/NETDP Technology Demonstration Application Analysis Report for Ex-Situ Hot Air Vapor Extraction System</i> NFESC-TR-2066-ENV	Global Remedial Technologies, Inc.	SERDP	
Hot-Gas Decontamination						X	TNT, Ammonium Picrate	Hawthorne Army Depot	1994	<i>Demonstration Results of Hot Gas Decontamination for Explosives at Hawthorne Army Depot</i> (4 vols.) ADA341521-ADA341524	Tennessee Valley Authority Reservation PO Box 1010 Muscle Shoals, AL 35661-1010 256-386-2601	USAEC	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>Ex Situ Thermal</i>													
Hot-Gas Decontamination						X	Explosives, Biological Agents	Alabama Army Ammunition Plant (ALAAP), Alpine, AL	1995	<i>Evaluation of a Transportable Hot-Gas Decontamination System for the Decontamination of Explosives-Contaminated Debris & Piping</i> ADA316327	Roy F. Weston, Inc. One Weston Way West Chester, PA 19380 610-701-7423	USAEC	
Incineration			X				PCBs	Demode Rd. Superfund Site, Rose Township, MI	1987	<i>Shirco Infrared Incineration System</i> EPA 540-A5-89-010	Shirco Infrared Incineration	USEPA-NRMRL	
Incineration				X			PAHs	Acid Pit	1988	<i>PYRETRON® Thermal Destruction, Organics in Soil, Sludge, and Solid Waste</i> EPA 542-B-93-009 (p 243)		USEPA-NRMRL	
Incineration			X				PCBs	Peake Oil Superfund Site, Brandon, FL	1987	<i>Shirco Infrared Incineration System</i> EPA 540-A5-89-010	Shirco Infrared Incineration	USEPA-NRMRL	
Incineration	X						MGP Wastes, Benzene, Naphthalene	EPA Incineration Research Facility, Jefferson, AR	1994	<i>Frequency Tunable Pulse Combustion System Cello® Pulse Burner, Sonotech Incorporated</i> EPA 540-R-95-502	Sonotech, Inc. Atlanta, GA	USEPA-NRMRL	
Incineration	X	X	X	X	X		VOCs, Metals	McColl Superfund Site	1989	<i>Ogden Circulation Bed Combustor at the McColl Superfund Site</i> EPA 540-R-92-001	General Atomics 3550 General Atomics Court San Diego, CA 92121 619-455-4495	USEPA-NRMRL	
Incineration				X	X		Heavy Metal, Pesticides	Ogden Research Facility, San Diego, CA	1989	<i>Ogden Circulation Bed Combustor at the McColl Superfund Site</i> EPA 540-R-92-001	General Atomics 3550 General Atomics Court San Diego, CA 92121 619-455-4495	USEPA-NRMRL	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>Ex Situ Thermal</i>													
Incineration		X		X			Hydrocarbons	Airfield (JP-4 Spill)	1993	Hrubetz Environmental Services, Inc., In Situ Thermal Oxidative (HRUBOUT) Process EPA 540-MR-93-524	Hrubetz Environmental Services, Inc. 5949 Sherry Lane, Suite 525 Dallas, Texas 75225 214-363-7833	USEPA-NRMRL	
Pyrovac Vacuum Pyrolysis		X		X			PAHs, Petroleum Hydrocarbons	Sand-Quarry	1993	Pyrovac Vacuum Pyrolysis Technology for the Remediation of Contaminated Soils DESRT 22 - Aug 94	Laval Univ./Institute Pyrovac, Inc.	Tech. Dev. Branch, Environment Canada	
Solar Destruction	X	X	X	X			VOCs, SVOCs	SAIC Test Site, Golden, CO	1997	Fabrication and Testing for Solar Detoxification Project SFIM-AEC-ET-CR-97038	Science Applications International Corp. (SAIC) Golden, CO 303-279-3030	USAEC	
Steam Enhanced Extraction	X	X	X	X			VOCs and SVOCs	Gasoline Test	1993	Berkeley Environmental Restoration Center (Enhanced Extraction) EPA 540-R-94-526 (p 32)	Berkeley Environmental Restoration Center 3112A Etch Hall Berkeley, CA 94720 510-642-2928	USEPA-NRMRL	
Thermal Catalytic Oxidation	X						Chlorinated VOCs	Savannah River Site, Aiken, SC	1992	Catalytic Oxidation System [fact sheet] www.envnet.org/envnet/scfa/tech/voc/pfa21.htm	Westinghouse Savannah River Co. John M. Haselow, PI 803-725-5219	USDOE-WSRC	
Thermal Desorption			X				PCB	Outboard Marine Corp., Waugen Harbor, IL	1992	SoilTech Anaerobic Thermal Processor: Outboard Marine Corporation Site, Soil Tech ATP Systems, Inc. EPA 540-MR-92-078	SoilTech ATP Systems, Inc. 800 Canonie Drive Porter, IN 46304 219-929-4343	USEPA-NRMRL	X

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>Ex Situ Thermal</i>													
Thermal Desorption			X				OCPs	Pesticide Site	1992	Low Temperature Thermal Aeration (LTTA) System, Canonie Environmental Services, Inc. EPA 540-MR-93-504	Canonie Environmental Services Corp. 800 Canonie Drive Porter, IN 46304 219-926-8651	USEPA-NRMRL	X
Thermal Desorption			X				PCBs	Brant, NY Site	1991	AOSTRA-SoilTech Anaerobic Thermal Processor: Wide Beach Development Site, SoilTech ATP Systems, Inc. EPA 540-MR-92-008	SoilTech ATP Systems, Inc. 800 Canonie Drive Porter, IN 46304 219-929-4343	USEPA-NRMRL	X
Thermal Desorption	X	X	X	X			VOCs, SVOCs, TPHs, PAHs	Lagoon Sludge	1991	Roy F. Weston, Inc.- Low Temperature Thermal Treatment (LT3) System EPA 540-AR-92-019	Roy F. Weston, Inc., One Weston Way West Chester, PA 19380 610-701-7423	USEPA-NRMRL	X
Thermal Desorption	X			X	X		PAH, SVOC, HM	Waste Treatment Plant	1994	Thermal Desorption at the Prestine Inc. Superfund Site Reading, Ohio EPA 542-R-95-001 (p 94)	SoilTech ATP Corporation 800 Canonie Drive Porter, IN 46304 219-926-8651	USEPA Region 5	X
Thermal Desorption	X	X		X			BTEX, PAH, TCE	Disposal Pit	1987	Thermal Desorption at McKin Company Superfund Site, Gray Maine EPA 542-R-95-001 (p 88)	Canonie Environmental Services, Corp. 800 Canonie Drive Porter, IN 46304 219-926-8651	USEPA Region 1	X
Thermal Desorption			X	X			PCBs, PAHs, Dioxin	Landfill	1992	Thermal Desorption Unit - Eli Eco Logic International, Inc. EPA 540-AR-94-504	ELI Eco Logic International, Inc. 143 Dennis Street Rockwood, Ontario, Canada NOB 2KO 519-856-9591	USEPA-NRMRL	X

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>Ex Situ Thermal</i>													
Thermal Desorption				X	X		PAHs, Metals, MBOCA	Impoundment Lagoon	1993	Thermal Desorption at the Anderson Development Company Superfund Site, Adrian, Michigan EPA 542-R-95-001 (p 84)	Roy F Weston, Inc. One Weston Way West Chester, PA 19380 610-701-7423	USEPA Region 5	X
Thermal Desorption			X				PBCs	Re-Solve Superfund Site, North Dartmouth, MA	1992	X-TRAX Model 200 Thermal Desorption System: Chemical Waste Management, Inc. EPA 540-MR-93-502	OHM Environmental	USEPA-RREL	
Thermal Desorption (Mobile Unit)					X		Hg	Soils from Natural Gas Metering Sites in NM	1994	Task 38: Commercial Mercury Remediation Demonstrations: Thermal Retorting and Physical Separation/Chemical Leaching DOE/MC/30098--5643	Mercury Recovery Services (MRS), New Brighton, PA North Dakota Univ. at Grand Forks Energy & Env. Research Center, D.S. Charlton	USDOE/Gas Research Institute	
Thermal Desorption					X		Hg	Clay Soil from a Mercury Recycling Facility in Bedford, OH	1993	"Mercury Recovery Services Rides a New Kind of Heavy-Metal Revival," Pittsburgh Business Times, 15:13, p 16, 30 Oct 1995	Mercury Recovery Services (MRS) New Brighton, PA	USDOE/Gas Research Institute/ Union Gas Ltd. (Canada)	
Thermal Desorption	X						PCB	Surface Disposal Area	1992	Thermal Desorption at the Outboard Marine Corporation Superfund Site Waukegan, Illinois EPA 542-R-95-001 (p 90)	SoilTech ATP System, Inc. 800 Canonie Drive Porter, IN 46304 219-926-8651	USEPA Region 5	X
Thermal Desorption			X				PCPs, Dioxins, Furans	Koppers Co. Superfund Site	1993	Risk Reduction Engineering Laboratory (Base-Catalyzed Decomposition Process) EPA 540-R-94-526 (p 106)	ETG Environmental, Inc. 660 Sentry Parkway Blue Bell, PA 19422 610-832-0700	USEPA-NRMRL	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
Ex Situ Thermal													
Thermal Desorption			X				PCBs	Re-Solve Superfund Site	1992	<i>Rust Remedial Services, Inc. (X*TRAX Thermal Desorption)</i> EPA 540-R-94-526 (p 118)	Rust Remedial Services, Inc. 7250 West College Drive Palo Heights, IL 60463 708-361-7520	USEPA-NRMRL	X
Thermal Desorption				X			DDT, Dieldrin, Lindane	Industrial	1993	<i>Thermal Desorption at the TH Agriculture & Nutrition Company Superfund Site, Albany, Georgia</i> EPA 542-R-95-001 (p 96)	Williams Environmental Services, Inc., 2076 West Park Place Stone Mountain, GA 30087 404-498-2020	USEPA Region 4	
Thermal Desorption/ Dehalogenation	X						PCBs	Roadways	1991	<i>Thermal Desorption/ Dehalogenation at the Wide Beach Development Superfund Site, Brant, NY</i> EPA 542-R-95-001 (p 98)	SoilTech ATP Corporation 800 Canonie Drive Porter, IN 46304 219-926-8651	USEPA Region 2	X
Thermal Desorption		X		X	X		Cyanide, VOCs, PAHs, Coal Tars	Gas Plant	1993	<i>Thermal Desorption System, Clean Berkshires, Inc.</i> EPA 540-R-94-507a	Maxymillian Technologies, Inc. Ten Post Office Square, Suite 600 Boston, MA 02109 617-695-9770	USEPA-NRMRL	
Thermal Destruction			X				PCBs	Four Test Sites	1987	<i>Gruppo Italimpresse (Infrared Thermal Destruction)</i> EPA 540-A5-89-010	Gruppo Italimpresse Rome, Italy 011-39-06-8802001	USEPA-NRMRL	
Thermal Destruction	X		X				Halogenated Hydrocarbons	EPA Research Facility, Ark	1988	<i>American Combustion - Oxygen Enhanced Incineration</i> EPA 540-A5-89-008	American Combustion, Inc. 4476 Park Drive Norcross, GA 30093 404-564-4180	USEPA-NRMRL	
Thermal Extraction							PAH, HM, Cyanide	Railroad Equipment	1992	<i>Thermal Extraction Project Pacific Place Site</i> DESRT 06 - Apr 93	Newalta Corporation/ UMATAC Industrial Process	TDBC & P	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
Ex Situ Thermal													
Thermal Treatment		X		X	X		Organics and Metals	Babcock & Wilcox Facility	1991	<i>Cyclone Furnace</i> EPA 542-B-93-009 (p 82)	Babcock and Wilcox Co. 1562 Beeson Street Alliance, OH 44601 216-829-7576	USEPA-NRMRL	
Thermal Treatment			X				Chlordane, SVOCs	Rockwell MSO Unit	1993	<i>Molten Salt Oxidation Process</i> EPA 542-B-93-009 (p 102)	Rockwell International	USDOE	
Thermal Treatment			X	X			Hydrocarbons	Contaminated Soil Test		<i>Thermal Treatment Process for Fuel Contaminated Soil</i> Demonstration Report Mar 90	U.S. Waste Thermal Processing	OPPTD,	
Thermal Treatment			X	X			Hydrocarbons	Cannery Site		<i>Thermal Treatment of Petroleum Hydrocarbon- Contaminated Soil</i> Demonstration Report Jun 91	Ogden Environmental Services, Inc.	OPPTD,	
Thermal Treatment			X	X			Hydrocarbons	Batch Plant		<i>Soil Detoxification Utilizing an Existing Aggregate Drier</i> Demonstration Report - Mar 90	South Coast Asphalt Products Company	OPPTD,	
Thermal Treatment	X			X			VOCs	Letterkenny Army Depot	1985	<i>Low Temperature Thermal Stripping</i> EPA 542-B-93-009 (p 97)	Roy F. Weston, Inc., One Weston Way West Chester, PA 19380 215-430-7423	USAEC	X
Thermally Enhanced Vapor Extraction		X					TPH	Advanced Fuel Hydrocarbon National Test Site, Port Hueneme, CA	1995	<i>D/NETDP Technology Demonstration Application Analysis Report for Ex-Situ Hot Air Vapor Extraction System</i> NFESC-TR-2066-ENV	Global Remedial Technologies, Inc. NFESC, Port Hueneme, CA Dr. Norm Helgeson 805-982-1335	SERDP-NETTS	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>Ex Situ Thermal</i>													
Vitrification	X				X		Radioactive Mixed Wastes	Savannah River Technology Center, Aiken, SC	1997	<i>EV-16 Vitrification Trials with MnO₂ and Surrogate B&C Pond Sludge</i> WSRC-TR-97-00406	Westinghouse Savannah River Co. Aiken, SC C.A. Cicero-Herman	USDOE-WSRC	
Vitrification	X				X		Radioactive Mixed Wastes	Clemson University ESED Vitrification Facility	1994	<i>Rocky Flats Plant Precipitate Sludge Surrogate Vitrification Demonstration</i> WSRC-RP-94-0062	Westinghouse Savannah River Co. Aiken, SC C.A. Cicero-Herman	USDOE-WSRC	
Vitrification				X	X		Metals, Phthalates, PAHs	Babcock & Wilcox Test Site	1991	<i>Babcock & Wilcox Co. - Cyclone Furnace Vitrification</i> EPA 540-AR-92-017	Babcock & Wilcox Co. 1562 Beeson Street Alliance, OH 44601 216-829-7395	USEPA-NRMRL	
Vitrification					X		Cr	Niagara Falls, NY	1997	<i>Cold Top Ex-Situ Vitrification Technology, Geotech Development Corporation</i> Capsule EPA 540-R-97-506a	NJIT, Newark, NJ and GeoTech Development Corp., King of Prussia, PA William Librizzi 973-596-5846 Thomas Tate 610-337-8515		
Vitrification					X		Radioactive Mixed Wastes, Mercury	Integrated Defense Waste Processing Facility Melter, Savannah River		<i>Summary of Pilot-Scale Activities with Mercury Contaminated Sludges</i> WSRC-TR-95-0404	Westinghouse Savannah River Co. Aiken, SC C.A. Cicero-Herman	USDOE-WSRC	
Vitrification	X	X	X	X	X		Radioactive Mixed Wastes, Organic Resins	Savannah River Site, Aiken, SC		<i>Summary of Pilot-Scale Activities with Resorcinol Ion Exchange Resin</i> WSRC-TR-95-0403	Westinghouse Savannah River Co. Aiken, SC C.A. Cicero-Herman	USDOE-WSRC	

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SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>Ex Situ Thermal</i>													
Vitrification					X		Radioactive Mixed Wastes, Ba, Cd, Cr, Pb, Ni	Clemson University ESED Vitrification Facility	1996	Transportable Vitrification System Pilot Demonstration with Surrogate Oak Ridge WETF Sludge WSRC-MS-96-0338	Westinghouse Savannah River Co., Aiken, SC J.R. Zamecnik 803-725-4535 jack.zamecnik@srs.gov	USDOE-WSRC	
Vitrification	X				X		Radioactive Mixed Wastes	Oak Ridge Reservation, Oak Ridge, TN	1997	Demonstration Project Report for the Transportable Vitrification System at the Oak Ridge East Tennessee Technology Park K/WM-186, V.1 & V.2	Westinghouse Savannah River Co., Aiken, SC J.R. Zamecnik 803-725-4535 jack.zamecnik@srs.gov	USDOE-WSRC	
Vitrification	X				X		Radioactive Mixed Wastes	Clemson University ESED Vitrification Facility	1994	Los Alamos National Laboratory Simulated Sludge Vitrification Demonstration WSRC-RP-94-0780	Westinghouse Savannah River Co., Aiken, SC C.A. Cicero-Herman	USDOE-WSRC	
Vitrification			X		X		Metals, Hexachloro-benzene	DOE Test Facility	1991	Retech, Inc. Plasma Centrifugal Furnace (Plasma Arc Vitrification) EPA 540-A5-91-007	Retech Inc., P.O. Box 997 100 Henry Street Station Road, Ukiah, CA 95482 707-462-6522	USEPA-NRMRL	X
<i>In Situ Thermal</i>													
Dynamic Underground Stripping		X		X			Gasoline Spill	Airfield	1994	Summary of the LLNL Gasoline Spill Demonstration - Dynamic Underground Stripping Project UCRL- ID-120416	Lawrence Livermore National Laboratory Earth Sciences Division Livermore, CA 94550 510-422-3521	USDOE-OTD	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Thermal</i>													
Dynamic Underground Stripping		X		X			Gasoline	Industrial	1991	<i>Summary, Dynamic Underground Stripping Demonstration, LLNL Gasoline Spill Site</i> UCRL-ID-118187	Lawrence Livermore National Laboratory Earth Sciences Division Livermore, CA 94550 510-422-3521	USDOE-OTD	
Dynamic Underground Stripping				X			Creosote, PCP, PAHs	Southern California Edison Poleyard, Visalia, CA	1998	<i>Dynamic Underground Stripping and Hydrous Pyrolysis/Oxidation, Southern California Edison, Visalia, CA: Tour Summary Report</i> www.envnet.org/envnet/scfa/rep-pub/reports/toursum/visalia.htm	SteamTech Environmental Services Hank Sowers 805-322-6478, LLNL Roger Aines, Principal Investigator 925-423-7184 aines@llnl.gov	USDOE-LLNL	
Dynamic Underground Stripping	X	X					BTEX, FHC, Benzene	Underground Storage Tanks	1993	<i>Dynamic Underground Stripping Demonstrated at LLNL, Gasoline Spill Site, Livermore California</i> EPA 542-R-95-001 (p 46)	Lawrence Livermore National Laboratory P.O. Box 508 Livermore, CA 94550 510-422-2646	Univ of CA, OTT	
Electrical Resistance Heating/Soil Vapor Extraction		X					BTEX	Test Site	1993	<i>LLNL Steam and SVE with Electrical Resistance Heating, Berkeley Environmental Restoration Center</i> EPA 542-K-94-009 (p 16)	Berkeley Environmental Restoration Center 3112A Etch Hall Berkeley, CA 94720 510-642-2928	BERC	
Electrical Resistance Heating/Soil Vapor Extraction	X						TCE & PCE	River	1993	<i>Savannah River, GA (DOE), Electrical Resistance Heating with SVE</i> EPA 542-K-94-009 (p 16)	Pacific Northwest Laboratory Battelle Blvd. Richland, WA 99352 509-376-0554	USDOE- Savannah River	X

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Thermal</i>													
Electrokinetic Heating		X					Fuel Oil	Naval Facility Pearl Harbor, HI	1999	Electrokinetic Heating [An EPA SITE Program document will be produced.]	Geokinetics Stephen R. Clark 510-704-2940 EPA NRMRL Thomas Holdsworth 513-569-7675	USEPA-NRMRL	
Hydraulic Fracturing/ Soil Heating			X	X			SVOCs, JP-8 Jet Fuel	Robert Gray Army Airfield, Fort Hood, TX	1997	<i>Remediation of Tight Soils: Hydraulic Fracture, Steam & Electro-Heating</i> AATDF TR-98-12 & TR-98-14	Fluor Daniel GTI Irvine, CA Jay Dablow Rice University, Houston, TX AATDF Kathy Balshaw-Biddle Fax: 713-285-5948	USAEC/AATDF	
Radio Frequency Heating			X	X			TPH, VOCs, SVOCs	Airfield	1994	<i>SITE Technology Capsule: KAI Radio Frequency Heating Technology</i> EPA 540-R-94-528a	Brown and Root Environmental 800 Oak Ridge Turnpike Jackson Plaza Oak Ridge, TN 37830 423-483-9900	USAF-Armstrong Laboratory	
Radio Frequency Heating with Vapor Extraction				X			Aldrin, Dieldrin, Endrin	Airfield	1992	<i>Rocky Mountain Arsenal Basin F, Radio Frequency Heating with SVE, IIT Research Institute</i> EPA 542-K-94-009 (p 13)	IIT Research Institute 10 West 35 th Street Chicago, Illinois 60616 312-567-4232	IIT	
Radio Frequency Heating with Vapor Extraction	X	X	X	X			VOCs & SVOCs	East TN Technology Park (ETTP), Oak Ridge, TN	1995	<i>In Situ Soil Heating Combined With Vacuum Extraction</i> [fact sheet] www.ornl.gov/K25/techdemo/insitu.htm	Oak Ridge National Laboratory Elizabeth Phillips 423-241-6172 ezp@ornl.gov [Demonstrated by IIT Research Institute, Inc.]	USDOE-ORNL	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Thermal</i>													
Radio Frequency Heating/Soil Vapor Extraction		X		X			Petroleum, Oil, Lubricants	Kelly Air Force Base, TX	1993	Kelly AFB, TX, Radio Frequency Heating with SVE, KAI Technologies, Inc., and IIT Research Institute EPA 542-K-94-009 (p 9)	KAI Technologies, Inc. 175 North New Boston Street Woburn, MA 01801 617-932-3328	USAF-Armstrong Laboratory	X
Radio Frequency Heating/Soil Vapor Extraction		X		X			TPH, DRO	Former Fire Training Site, Kirtland AFB, Albuquerque, NM	1997	Enhanced Soil Vapor Extraction with Radio Frequency Heating AATDF TR-98-4; TR-98-9	Brown and Root Environmental Oak Ridge, TN KAI Technologies, Inc. Portsmouth, NH University of Illinois Dr. David E. Daniel, PI 217-333-1497 dedaniel@uiuc.edu	AATDF/ U. of IL/U. of TX, Austin	
Radio Frequency Heating/Soil Vapor Extraction		X		X				Airfield	1992	Volk Air National Guard Base, WI, Radio Frequency Heating with SVE, IIT Research Institute EPA 542-K-94-009 (p 14)	IIT Research Institute 10 West 35 th Street Chicago, Illinois 60616 312-567-4232	IIT	
Radio Frequency Heating/Electrical Resistance/ Soil Vapor Extraction								Airfield	1995	Kirkland AFB Radio Frequency/ Electrical Resistance Heating with SVE IIT Research Institute EPA 542-K-94-009 (p 15)	IIT Research Institute 10 West 35 th Street Chicago, Illinois 60616 312-567-4232	USAF-Armstrong Laboratory	
Radio Frequency Heating/Soil Vapor Extraction		X					BTEX	Former Gas Station, St. Paul, MN	1996	Analysis of Selected Enhancements for Soil Vapor Extraction EPA 542-R-97-007 (p 7-17)	KAI Technologies, Inc. Woburn, MA Raymond Kasevich 603-431-2266		
Radio Frequency Heating/Soil Vapor Extraction	X						TCE & PCE	Airfield	1993	Savannah River, GA (DOE) Radio Frequency Heating with SVE, KAI Technologies, Inc. EPA 542-K-94-009 (p 11)	KAI Technologies, Inc. 175 North New Boston Street Woburn, MA 01801 617-932-3328	USDOE-Savannah River	X

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Thermal</i>													
Six Phase Soil Heating	X						DNAPLs	Groundwater Remediation Field Laboratory (GRFL), Dover AFB, DE	1997	<i>Six-Phase Heating™ Application Analysis Report: Aquifer Heating & DNAPL Treatment, Dover Air Force Base, Delaware—Executive Summary</i>	Battelle Pacific Northwest Laboratory (PNL) Richland, WA Theresa Bergsman 509-376-3638	USAF	
Six Phase Soil Heating	X	X					TCE, BTEX	Former Fire Training Pit, U.S. Air Force Reserves Site, Niagara Falls, NY	1993	"Soil Vapor Extraction to the Sixth Degree: Six-Phase Soil Heating Takes SVE to Next Level," <i>Soil & Ground-water Cleanup Online</i> www.sgcleanup.com	Battelle Pacific Northwest Laboratory (PNL) Richland, WA Theresa Bergsman 509-376-3638	USAF	
Six Phase Soil Heating							(Cold Site Demo)	300 Area, Hanford, WA	1993	<i>Six Phase Soil Heating: Innovative Technology Report</i> DOE/EM-0272	Battelle Pacific Northwest Laboratory (PNL) Theresa Bergsman, PI 509-376-3638	USDOE	
Six Phase Soil Heating	X						TCE & PCE	Savannah River M Area	1994	<i>Six Phase Soil Heating</i> DOE/EM-0272 Apr 95	Pacific Northwest Laboratory Battelle Blvd Richland, WA 99352 509-376-3638	USDOE Cloverleaf	X
Soil Warming/ Bioventing		X					JP-4	Stratton Air National Guard Base (SANG), Scotia, NY		"System Heats Soil In Situ to Improve Bioremediation," <i>Soil & Groundwater Cleanup Online</i> www.sgcleanup.com	Donald J. Geisel & Associates Inc. Clifton Park, NY Don Geisel [HeatTrobe components]	USAF-Armstrong Laboratory	
Steam and Air Stripping		X					VOCs	Fuel	1992	<i>Toxic Treatments, In Situ, Steam/Hot Air Stripping Technology, (Applications Analysis Report)</i> EPA 540-A5-90-008	Peroxidation Systems, Inc. 151 Union Street, Suite 155 San Francisco, CA 94111 415-391-2113	USEPA-NRMRL	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Thermal</i>													
Steam and Air Stripping	X	X	X	X			VOCs and SVOCs	Soil Blocks	1989	<i>Novaterra, Inc. (In Situ Steam and Air Stripping)</i> EPA 540-R-94-526 (p 100)	Novaterra, Inc. 1801 Avenue of the Stars Suite 640 Los Angeles, CA 90067 301-843-3190	USEPA-NRMRL	X
Steam Heating with Vapor Extraction		X		X			VOCs & SVOCs	ANNEX Terminal	1989	<i>ANNEX Terminal, San Pedro, CA, Steam Heating with Soil Vapor Extraction, NOVATERRA, Inc.</i> EPA 542-K-94-009 (p 7)	Novaterra, Inc. 1801 Avenue of the Stars Suite 640 Los Angeles, CA 90067 310-843-3190	USEPA-NRMRL	X
Steam Heating with Vapor Extraction		X					BTEX	Huntington Beach Site	1993	<i>Huntington Beach, CA, Steam Heating with Soil Vapor Extraction, Hughes Environmental Systems</i> EPA 542-K-94-009 (p 8)	Hughes Environmental Systems Inc. 1240 Rosecrans Ave. Manhattan Beach, CA 90266 714-375-6445	USEPA-NRMRL	
Steam Heating with Vapor Extraction		X					VOCs & SVOCs	Berkeley, CA	1988	Solvent Service, Inc., CA, Steam Heating with SVE, Berkeley Environmental Restoration Center EPA 542-K-94-009 (p 9)	Berkeley Environmental Restoration Center 3112A Etch Hall Berkeley, CA 94720 510-642-2928	USAF-Armstrong Laboratory	
Steam Injection/ Soil Vapor Extraction	X		X				NAPLs, Chlorinated Solvents, Weathered Fuels	Hill AFB, UT	1997	Steam Injection/Vacuum Extraction [An EPA SITE Program document will be produced.]	Praxis Environmental Services San Francisco, CA Dr. Lloyd Steward 415-641-9044	USAEC/ USEPA-NRMRL	X

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Thermal</i>													
Steam Injection	X		X				NAPLs, Chlorinated Solvents, Weathered Fuels	OU-1, Hill AFB, UT	1995	<i>Demonstration of Steam Injection As an Enhanced Source Removal Technology for Aquifer Restoration</i> ARA-5241 (ADA364010)	Applied Research Associates, Inc. South Royalton, VT 802-763-8348 Praxis Environmental Technologies Burlingame, CA 415-548-9288	USAEC	
Steam Stripping, Dual Auger Rotary	X						Chlorinated Solvents	Pinellas STAR Center, Largo, FL	1996	"In Situ Steam Stripping and Bioremediation Used in Shallow Media at Pinellas," <i>Ground Water Currents</i> , June 1998	Sandia National Laboratories Mike Hightower 505-844-5499	USDOE/USEPA/ FL Dept. of Env. Protection	
Subsurface Volatilization & Ventilation System	X	X					BTEX, PCE, TCE	Buchanan Michigan Site	1994	<i>Billings & Assoc., Inc. (SVVS)</i> EPA 540-A5-94-526 (p 34)	Billings & Associates, Inc. 3816 Academy Parkway N-NE Albuquerque, NM 87109 505-345-1116	USEPA-NRMRL	X
Thermal Desorp- tion (Thermal Blankets)			X				PCBs	Mare Island Naval Shipyards, Vallejo, CA	1997	<i>A Demonstration of In-Situ Thermal Desorption- Destruc- tion of PCB's in Contaminated Soils at Mare Island Shipyards</i> NFESC-TDS-2051-ENV	TerraTherm Environmental Services Houston, TX 281-925-0400 RT Environmental Services, Inc King of Prussia, PA 610-265-1510	BADCAT	
Thermal Desorp- tion (Thermal Wells)			X				PCBs	Mare Island Naval Shipyards, Vallejo, CA	1997	<i>A Demonstration of In-Situ Thermal Desorption- Destruc- tion of PCB's in Contaminated Soils at Mare Island Shipyards</i> NFESC-TDS-2051-ENV	TerraTherm Environmental Services, Houston, TX 281-925-0400 RT Environmental Services, Inc King of Prussia, PA 610-265-1510	BADCAT	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Thermal</i>													
Thermal Desorption					X		Hg	LEFPC Floodplain Soil, ORNL, Oak Ridge, TN		<i>Final Report for the Pilot-scale Thermal Treatment of Lower East Fork Poplar Creek Floodplain Soils</i> DE95009046	IT Corp. Knoxville, TN Oak Ridge National Lab., TN M.I. Morris	USDOE-ORNL	
Thermal Desorption (Thermal Wells)			X				PCBs	Missouri Electric Works Superfund Site, Cape Girardeau, MO		"Technology: EPA Testing New Remediation Process That Could Heat-Vaporize Pollutants," <i>Hazardous Waste News</i> , 20:16, 20 Apr 1998	Shell Oil General Electric EPA Region VII Pauletta France-Issets 913-551-7003	USEPA	
Thermal Desorption (Thermal Blankets)			X				PCBs	Missouri Electric Works Superfund Site, Cape Girardeau, MO		"Technology: EPA Testing New Remediation Process That Could Heat-Vaporize Pollutants," <i>Hazardous Waste News</i> , 20:16, 20 Apr 1998	Shell Oil General Electric EPA Region VII Pauletta France-Issets 913-551-7003	USEPA	
Thermal Injection	X						TCE	Kennedy Space Flight Center, Cape Canaveral, FL	Open	"DNAPL Interagency Agreement (Work Package #SS06—Biological Treatment Systems)," <i>SCFA Midyear Review Report and Supporting Documentation</i> , 1999	Steve Antonioli. PI	USDOE/DOD/ USEPA/NASA	
Thermal Oxidation	X						TCE, PCE, TCA	M-Area Process Sewer, Savannah River Site, Aiken, SC	1995	"Flameless Thermal Oxidation...", <i>Remediation Case Studies</i> , V. 6: <i>Soil Vapor Extraction and Other In Situ Technologies</i> EPA 542-R-97-009 (p 142-162)	Thermatrix Knoxville, TN Bob Wilbourn 423-539-9603	USDOE-WSRC- HAZWRAP	
Thermal Treatment		X		X			Volatile/Semi-Volatile Petroleum	Volk Field ANGB	1989	<i>Radio Frequency Thermal Soil Decontamination</i> EPA 542-B-93-009 (p 107)		USAF-Armstrong Laboratory	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Thermal</i>													
Thermal Treatment		X		X			Volatile/Semi-Volatile Petroleum	Kelly Air Force Base, Texas	1993	Radio Frequency Thermal Soil Decontamination EPA 542-B-93-009 (p 107)		USAF-Armstrong Laboratory	
Thermal Treatment (Electrical Resistance)	X						TCE	Kennedy Space Flight Center, Cape Canaveral, FL	Open	"DNAPL Interagency Agreement (Work Package #SS06—Biological Treatment Systems)," SCFA Midyear Review Report and Supporting Documentation, 1999	Steve Antonioli, PI	USDOE/DOD/USEPA/NASA	
Thermal Treatment	X						TCE	Tinker AFB, OK	1989	Demonstration of Thermal Stripping of JP-4 and Other VOCs from Soils at Tinker Air Force Base ADA222235	Roy F. Weston, Inc. West Chester, PA	USAF	
Thermal Treatment		X		X			Volatile/Semi-Volatile Petroleum	Volk Field ANGB	1985	Radio Frequency Thermal Soil Decontamination EPA 542-B-93-009 (p 107)		USAF-Armstrong Laboratory	
Thermal Enhanced Recovery		X		X			Oily Wastes	Stroudsburg, PA	1997	Contained Recovery of Oily Wastes [An EPA SITE Program document will be produced.]	Western Research Institute Laramie, WY James Speight 307-721-2011	USEPA-NRMRL	X
Thermal Enhanced Recovery		X		X			Oily Waste	Penn.Power & Light Site	1993	Contained Recovery of Oily Wastes Process, Coal Tar Derivatives and Petroleum By-products in Soil EPA 542-B-93-009 (p. 194)	Western Research Institute P.O. Box 3395, University Station Laramie, WY 82071-3395 307-721-2281	USEPA-NRMRL	X
Thermal Enhanced Recovery		X					TPH, BTEX	Diesel Fuel Spill	1993	Hughes Environmental Systems, Inc., Steam Enhanced Recovery Process EPA 540-MR-94-510	Hughes Environmental Systems, Inc. 1240 Rosecrans Ave. Manhattan Beach, CA 90266 714-375-6445	USEPA-NRMRL	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>In Situ Thermal</i>													
Vitrification			X		X		Metals, Dioxins, PCBs	Chemical Process	1994	<i>In Situ Vitrification - Geosafe Corporation</i> EPA 540-MR-94-520	Geosafe Corporation 2950 George Washington Way Richland WA 99352 509-375-0710	USEPA-NRMRL	X
Vitrification				X	X		PAH, Heavy Metal	Drainage Site	1994	<i>In Situ Vitrification at the Parsons Chemical/ETM Enterprises Superfund Site, Grand Ledge, MI</i> EPA 542-R-95-001 (p 92)	Geosafe Corporation 2950 George Washington Way Richland WA 99352 509-375-0710	USEPA Region 5	X
Vitrification					X		Radioactive Wastes	K-Reactor Seepage Basin, SRS, Aiken, SC	1996	<i>Final Report for the Demonstration of Plasma In Situ Vitrification at the 904-65G K-Reactor Seepage Basin</i> WSRC-RP-97-405	Westinghouse Savannah River Co. Aiken, SC R.F. Blundy	USDOE-WSRC	
Vitrification					X		Radioactive Wastes	Georgia Institute of Technology, Atlanta, GA	1997	<i>Demonstration of In Situ Plasma Vitrification Technology for Savannah River Site Contaminated Soils</i> WSRC-TR-97-0182	Westinghouse Savannah River Co. Aiken, SC R.F. Schumacher	USDOE-WSRC	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
Off-Gas Treatment													
Biofiltration	X						TCE	Anniston Army Depot, AL	1999	<i>Remediation of Air Streams Contaminated with Trichloroethylene Using Biofiltration at Anniston Army Depot</i> [fact sheet] aec.army.mil/	U.S. Army Environmental Center Wayne Sisk wesisk@aec.apgea.army.mil	USAEC/Anniston Army Depot/TVA	
Flameless Thermal Oxidation	X	X					TCE, VC, cis-1,2-DCE, benzene	Operable Unit C1, McClellan AFB	1995	<i>Flameless Thermal Oxidation of Vapor Phase Compounds</i> [fact sheet] www.mcclellan.af.mil/EM/TECH/sd_flame.htm	McClellan AFB, CA Phil Mook 916-643-5443 [Vendor: Thermatrix, Inc.]	USAF- McClellan AFB	
Flameless Thermal Oxidation	X	X					CAHs, TCE, PCE	Former Fire Training Area, Plattsburgh AFB, NY	1997	"Performance and Cost Evaluation of Flameless Thermal Oxidation for Vapor-Phase VOC Treatment," <i>Third Tri-Service Environmental Technology Workshop</i> , 1998	Thermatrix, Inc. Knoxville, TN	USAF	
Nonthermal Plasma Technology (NPT)	X	X	X	X			VOCs	Tinker AFB		<i>Small-Scale Demonstration of Nonthermal Plasma VOC Treatment at Tinker AFB</i> LA-UR-96-3859	Los Alamos National Lab., NM R.A. Korzekwa	USDOE-LANL/USAF	
PetroLOK™ PL22	X	X					TCE, 1,1-DCE, cis-1,2-DCE, Ethylbenzene	Operable Unit C1, McClellan AFB	1995	<i>Elastomeric Polymer Filter Media for Vapor Phase Compounds</i> [fact sheet] www.mcclellan.af.mil/EM/TECH/sd_elast.htm	McClellan AFB, CA Phil Mook 916-643-5443 [Vendor: Advanced Water Systems]	USAF-McClellan AFB/USEPA/Cal-EPA	
Photocatalytic Destruction	X	X					TCE, 1,1-DCE, cis-1,2-DCE, Ethylbenzene	Operable Unit C1, McClellan AFB	1995	<i>Titanium Dioxide Photocatalytic Destruction of Vapor Phase Compounds</i> [fact sheet] www.mcclellan.af.mil/EM/TECH/sd_tidi.htm	McClellan AFB, CA Phil Mook 916-643-5443 mook.phil@smal.mcclellan.af.mil [Vendor: Matrix Photocatalytic]	USAF-McClellan AFB/USEPA/Cal-EPA	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
Off-Gas Treatment													
Photocatalytic Oxidation	X						PCE	Loring AFB, ME	1996	"Results from Air Emission Control Studies," <i>HazTECH News</i> , 11:22, 7 Nov 1996	KSE Inc. Amherst, MA James Kittrell 413-549-5506	USEPA SITE Program	X
Photocatalytic Destruction	X	X					VOCs	Stamina Mills Superfund Site, N. Smithfield, RI	1999	AIR II Photocatalytic Technology for Air Streams [An EPA SITE Program document will be produced.]	KSE, Inc. Amhurst, MA James Kittrell 413-549-5506	USEPA-NRMRL	X
Photolytic Destruction	X	X	X	X			TCE, PCE, 1,1,1-TCA, Xylenes, SVOCs	Operable Unit D, McClellan AFB	1996	<i>Photolytic Destruction of Vapor Phase Compounds</i> [fact sheet] www.mcclellan.af.mil/EM/TECH/sd_photo.htm	McClellan AFB, CA Phil Mook 916-643-5443 [Vendor: Process Technologies, Inc.]	USAF-McClellan AFB/USEPA/Cal-EPA	X
Photolytic Destruction	X						Chlorinated Solvents	Naval Air Station North Island, San Diego, CA	1998	<i>Photolytic Destruction Technology for Chlorinated & Petroleum Hydrocarbons</i> TDS-2056-ENV	Naval Facilities Engineering Service Center (NFESC) Port Hueneme, CA John Talley 805-982-5081; DSN 551-5081	NFESC	
Purus Adsorption Desorption Remediation Equipment (PADRE)	X	X	X	X			TCE, PCE, 1,1,1-TCA, Xylenes, SVOCs	Operable Unit D, McClellan AFB	1994	<i>Regenerable Adsorption of Vapor Phase Compounds</i> [fact sheet] www.mcclellan.af.mil/EM/TECH/sd_regen.htm	McClellan AFB, CA Phil Mook 916-643-5443 mook.phil@smal.mcclellan.af.mil [Vendor: Purus, Inc.]	USAF-McClellan AFB/USEPA/Cal-EPA	
Silent Discharge Plasma Destruction	X	X	X	X			TCE, PCE, 1,1,1-TCA, Xylenes, SVOCs	Operable Unit D, McClellan AFB	1996	<i>Nonthermal Plasma Destruction of Vapor Phase Compounds</i> [fact sheet] www.mcclellan.af.mil/EM/TECH/sd_nonth.htm	McClellan AFB, CA Phil Mook 916-643-5443 [Vendor: ENV America, Irvine, CA]	USAF-McClellan AFB/USEPA/Cal-EPA	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
SOIL, SLUDGE, AND SEDIMENT DEMONSTRATION PROJECTS													
<i>Off-Gas Treatment</i>													
UV/Oxidation		X		X			Gasoline Residuals	Site SS-20 (MOGAS), Myrtle Beach AFB, Myrtle Beach, SC	1996	Performance and Cost Evaluation of ULTROX D-TOX UV/Oxidation System for the Treatment of Hydrocarbon Vapors from Fuel-Contaminated Soils 1996, ADA324 022/3	Zimpro, ULTROX Division Parsons Engineering	USAF	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
<i>Ex Situ Biological</i>													
Bioreactor, Fixed Film		X					BTEX	Allied Signal, St. Joseph, MI Superfund Site	1996	Submerged Aerobic Fixed Film Reactor [An EPA SITE Program document will be produced.]	Allied Signal Corp. Des Plaines, IL Steve Lupton 708-391-3500	USEPA-NRMRL	
Bioreactor (GAC-FBR)		X		X	X		PAHs, BTEX, Metals	Atlanta Gas Light Company, Augusta, GA	1997	<i>Mobile Bioreactor Demonstration</i> setechctr.org/Environmental/mobile.htm	Southeastern Technology Center (STC) Jim Ullery 706-722-3490 JUllery@setechctr.org	STC/USDOE-SR	
Bioreactor, Fixed- Film	X		X				Chlorobenzene	Robins AFB, GA	1992	<i>Chlorobenzene Bioreactor Demonstration</i> AL/EQ-1993-0008	U.S. EPA Dennis Miller 580-436-8567 miller.dennise@epa.gov U.S. Air Force Cathy Vogel	USAF	
Bioreactor, Fluidized Bed Adsorption	X						TCE	CRREL, Hanover, NH	1996	<i>Fluidized-Bed Adsorption Bioreactor for the Treatment of Groundwater Contaminated with Solvents at Low Concentration</i> CRREL Special Report 99-1	Cold Regions Research and Engineering Laboratory (CRREL) Hanover, NH Dr. Paul H. Miyares	SERDP	
Bioreactor, Fixed- Film	X						Chlorinated Solvents	Kelly AFB, TX	1990	<i>Biological Treatment of Groundwater Contaminated with Mixtures of Aromatic Compounds</i> AFCESA/ESL-TR-91-42	Air Force Civil Engineering Support Agency Tyndall AFB, FL C.A. Pettigrew, J. Spain, C.M. Vogel	USAF	
Bioremediation			X	X			PAHs, Phenolics	American Creosote Works, Pensacola, FL	1991	<i>SBP Technologies, Inc., Membrane Filtration and Bioremediation</i> EPA 540/AR-92/014	SBP Technologies, Inc. 6149 North Shore Drive Baton Rouge, LA 70817 504-753-5255	USEPA-NRMRL	X

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
Ex Situ Biological													
Bioremediation (Landfarming)		X					BTEX	Fairbanks International Airport, Fairbanks, AL	1992	<i>Bioremediation of Hydrocarbon-Contaminated Groundwater in Northern Climates</i> CRREL Special Report 98-5 (p 5-11)	U.S. Army Cold Regions Research and Engineering Laboratory (CRREL) Hanover, NH Charles M. Reynolds 603-646-4394 reynolds@crrel.usace.army.mil	USACE/ Alaska DOT/ SERDP	
Bioremediation			X				PCP	Wood Preserving	1989	<i>Biotrol - Biotreatment of Groundwater</i> EPA 540/A5-91/001	Biotrol, Inc. 10300 Valley View Road Suite 107 Eden Prairie, MN 55344 612-942-8032	USEPA-NRMRL	X
Bioremediation (GAC-FBR)	X		X				Chlorinated Solvents, Nitrated Compounds, Aromatic Hydrocarbons	Various Military Facilities		<i>Treatment of Industrial Process Effluents & Contaminated Groundwater Using the Biological Granular Activated Carbon-Fluidized Bed Reactor (GAC-FBR) Process</i> V.1: ADA348453, V.2: ADA348454	EFX Systems, Inc. Lansing, MI Benovska, Mirka; Cook, Jeff; Groshko, Veronica; Heine, Bob; Hohman, Connie	SERDP	
In Situ Biological													
Air Sparging	X						CAHs	Selected DoD Sites	Open	<i>Use of Comatabolic Air Sparging to Remediate Chloroethane- Contaminated Groundwater Aquifers</i> www.estcp.org/projects/cleanup/remediation/199810o.htm	Applied Research Associates, Inc. Tyndall AFB, FL Erica S.K. Becvar 850-283-6225 erica.becvar@mlq.afri.af.mil	ESTCP	
Air Sparging		X					BTEX	Former Fueling Facility, Homer, AK	1993	<i>"The Use of Oxygen Release Compound for Groundwater Bioremediation in Alaska," 7th ACS Special Symposium. 1995 (p 917)</i>	Hart Crowser Anchorage, AK H.J. Marlow		

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
<i>In Situ Biological</i>													
Air Sparging (Push-Pull Monitoring/Optimization)		X					Gasoline	Naval Exchange Service Station, Port Huene National Test Site, CA	1997	"Diagnostic Tools for Quantifying Oxygen Mass Transfer During In Situ Air Sparging," <i>In Situ Bioremediation of Petroleum Hydrocarbon and Other Organic Compounds</i> . 1999. (p 123-129)	Arizona State University Tempe, AZ Cristin L. Bruce Oregon Graduate Institute Beaverton, OR Illa L. Amerson	U.S. Navy-NSEFC	
Air Sparging (Air-Injection Tracer Monitoring/Optimization)		X					Gasoline	Naval Exchange Service Station, Port Huene National Test Site, CA	1997	"Diagnostic Tools for Quantifying Oxygen Mass Transfer During In Situ Air Sparging," <i>In Situ Bioremediation of Petroleum Hydrocarbon and Other Organic Compounds</i> . 1999. (p 123-129)	Arizona State University Tempe, AZ Cristin L. Bruce Oregon Graduate Institute Beaverton, OR Illa L. Amerson	U.S. Navy-NSEFC	
Bio-Fix Beads					X		Heavy Metals	Acid Mine Drainage Waters		<i>BIO-FIX Beads</i> EPA 542/B-93/009 - Oct 93 (p 19)		US BOM	
Biobarrier	X						TCE, cis-DCE	Gilbert-Mosley Superfund Site, Wichita, KS	1996	"Bioaugmentation with New Organism Wins AAEE Excellence Award," <i>HazTECH News</i> , 12:11, 5 June 1997	Camp Dresser & McKee Kansas City, MO	USEPA	
Biodegradation		X		X			Fuels, Oils, & Non-halogen Solvents	JP-4 at Kelly Air Force Base		<i>In Situ Biodegradation</i> EPA 542/B-93/009 - Oct 93 (p 49)		USAF-Armstrong Laboratory	
Biodegradation		X			X		Organics & Metals	Columbia County Landfill, GA	1997	"Southeastern Technology Center Tests Aerobic System..." <i>Tech Trends</i> , July 1997	Southeastern Technology Center (STC) James Ullery 706-722-3490	STC/ USDOE-SR	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
<i>In Situ Biological</i>													
Biodegradation		X		X			Fuels, Oils, & Non-halogen Solvents	JP-4 at Elgin Air Force Base		<i>In Situ Biodegradation</i> EPA 542/B-93/009 - Oct 93 (p 49)		USAF-Armstrong Laboratory	
Biodegradation	X	X	X	X			TCE, Organics	Groundwater Seep, ORNL K-25 Site	1994	<i>Demonstration of Co-Metabolic Techniques</i> DOE/EM-0248 - Jun 95 (p 169)	Oak Ridge National Laboratory P.O. Box 2008 Oak Ridge, TN 37831 615-576-4853	USDOE- Germantown	
Biodegradation	X						TCE, PCE	Nuclear Production		<i>Aerobic Biodegradation</i> EPA 542/B-93/009 - Oct 93 (p 9)		USDOE-Savannah River	
Biofilters	X						TCE	Chico Municipal Airport, CA	1995	<i>In Situ Microbial Filters, Chico Municipal Airport Site: Resting-State Biofilter Concept Proven in Field Test</i> UCRL-TB-123399	Brown and Caldwell Walnut Creek, CA Lawrence Livermore National Lab. Richard Knapp 925-423-3328 knapp4@llnl.gov	USDOE-OSTD/ Victor Muscat Trust	
Biological Treatment	X						TCE	Airfield	1989	<i>In Situ and Above-Ground Biological Treatment of TCE</i> EPA 542/B-93/009 - Oct 93 (p 47)		USAF-Armstrong Laboratory	
Bioremediation	X						TCA	Hanford Test Site	1995	<i>In Situ Bioremediation of Groundwater</i> DOE/EM-0248 - Jun 95 (p 183)	Pacific Northwest Laboratory, Battelle Blvd. Richland, WA 99352 509-376-3903	USDOE	X
Bioremediation							BTEX	Electric Utility Site	1992	<i>Bioremediation Field Initiative Site Profile: Public Service Company of Colorado</i> EPA 540-506D - Jul 95	EPA NRMRL/ Univ of Colorado Denver, Colorado	USEPA Region 8	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
<i>In Situ Biological</i>													
Bioremediation (PHOSter™ Nutrient Injection)		X					BTEX	Fuel Depot, Augusta-Richmond County Central Shop, GA	Open	<i>PHOSter Bioremediation Technology: Award- Winning Technology Demonstrated in Downtown Augusta</i> setechctr.org/Environmental/phoster.htm	Southeastern Technology Center (STC) Jim Ullery 706-722-3490 JUllery@setechctr.org	STC/USDOE-SR	
Bioremediation	X						CT, Nitrate	Hanford 200 Area	1996	<i>In Situ Bioremediation for the Hanford Carbon Tetrachloride Plume</i> DOE/EM-0418	Pacific Northwest National Laboratory (PNNL) Rod Skeen 509-375-2265	USDOE-PNNL	
Bioremediation		X		X			JP-4 Jet Fuel BTEX	Elgin AFB, FL	1994	<i>Pilot Demonstration of Nitrate-Based Bioremediation of Fuel-Contaminated Aquifer at Elgin AFB, Florida: Site Characterization, Design, and Performance Evaluation</i> AL/EQ-TP-1996-0034	Robert S. Kerr Environmental Research Laboratory Ada, OK Stephen R. Hutchins hutchins.steve@epa.gov	Air Force Engineering Services Center, Tyndall AFB, FL	
Bioremediation		X					BTEX	Fuel Spill Site		<i>Bioremediation of Aromatic Hydrocarbons</i> EPA 542/B-93/009 - Oct 93 (p 29)		Naval Weapons Station	
Bioremediation Barrier		X					TPH	Denver Federal Center, CO	1996	"Bioremediation Barrier Emplaced through Hydraulic Fracturing," <i>Ground Water Currents</i> , March 1999	FOREMOST Solutions, Inc. Seth Hunt 303-271-9114 EPA Region 8 Sandra Stavnes stavens.sandra@epa.gov	USEPA/GSA/ State of CO	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
<i>In Situ Biological</i>													
Bioremediation (Recirculating Leachbeds)		X					BTEX	Fairbanks International Airport, Fairbanks, AL	1991	<i>Bioremediation of Hydrocarbon-Contaminated Groundwater in Northern Climates</i> CRREL Special Report 98-5 (p 15-16)	U.S. Army Cold Regions Research and Engineering Laboratory (CRREL) Hanover, NH Charles M. Reynolds 603-646-4394 reynolds@crrel.usace.army.mil	USACE/ Alaska DOT/ SERDP	
Bioremediation (Hydraulic Fracturing)		X					TPH	Denver Federal Center, CO	1996	"Bioremediation Barrier Emplaced through Hydraulic Fracturing," <i>Ground Water Currents</i> , March 1999	FOREMOST Solutions, Inc. Seth Hunt 303-271-9114 EPA Region 8 Sandra Stavnes stavens.sandra@epa.gov	USEPA/GSA/ State of CO	
Bioremediation (Monitoring/ Optimization)				X			Naphthalene	ORNL, Oak Ridge, TN	1996	<i>Genetically Engineered Microbes (GEMs) to Determine Contaminant Bioavailability</i> [fact sheet] www.envnet.org/envnet/scfa/tech/voc/pfa33.htm	University of Tennessee Gary Sayler, PI 423-924-8080 DOE-Savannah River Site Jim Wright, Program Manager 803-725-5608	USDOE-ORNL/ University of Tennessee	
Bioremediation		X		X			JP-4 Jet Fuel, BTEX	U.S. Coast Guard Air Station, Traverse City, MI	1989	"Nitrate-Mediated Biodegradation of BTEX in JP-4 Contaminated Soil and Groundwater: a Field Pilot- Scale Demonstration Project," <i>Bioremediation - Field Experience</i> , 1994 (p 361-379)	Robert S. Kerr Environmental Research Laboratory Ada, OK Stephen R. Hutchins hutchins.steve@epa.gov	USEPA/USCG	
Bioremediation			X	X			PAHs, PCP	Wood Preserving Facilities	1995	<i>Bioremediation of Field initiative Site Profiles: Libby Ground Water Superfund Site</i> EPA 540-F-95-506A	USEPA NRMRL Utah State University, Utah	USEPA-NRMRL	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
<i>In Situ Biological</i>													
Bioremediation	X						TCE	Kennedy Space Center, Florida		<i>In Situ Microbial Filters</i> EPA 542/R-95/006 - May 95 (p 25)	Lawrence Livermore National Laboratory Livermore, CA 510-423-3118	USDOE-LLNL	
Bioremediation	X						Chlorinated Solvents	4 Sites in TN, Unidentified	Open	Creation of Guidelines for Evaluating In-Situ Bioremediation of Chlorinated Solvents & Demonstration of the Technique: USGS PROJECT TN127 - Superfund Bioremediation	USGS Nashville District Office Thomas D. Byl 615-837-4700	USGS/ TN DEC	
Bioremediation (Infiltration Galleries)		X					BTEX	Fairbanks International Airport, Fairbanks, AL	1992	<i>Bioremediation of Hydrocarbon-Contaminated Groundwater in Northern Climates</i> CRREL Special Report 98-5 (p 11-14)	U.S. Army Cold Regions Research and Engineering Laboratory (CRREL) Hanover, NH Charles M. Reynolds 603-646-4394 reynolds@crrel.usace.army.mil	USACE/ Alaska DOT/ SERDP	
Bioremediation					X		Nitrates	Bendena Site, KS	1999	Biological Denitrification [An EPA SITE Program document will be produced.]	Eco Mat, Inc. Hayward, CA Kim Halley 510-783-5885 EPA-NRMRL Ronald Lewis 513-569-7856	USEPA-NRMRL	
Bioslurping		X					TPH	Fuel Farm	1994	<i>Bioslurping: Vacuum-Enhanced Free-Product Recovery Coupled with Bioventing: A Case Study</i> Abstract	Battelle Columbus Laboratory 505 King Avenue Columbus, Ohio 43201 614-424-4698	U.S. Navy PWD	X

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
<i>In Situ Biological</i>													
Bioventing		X					TPH	Selected DoD Sites	Open	Natural Pressure-Driven Passive Bioventing [fact sheet] www.estcp.org/projects/cleanup/ remediation/199715o.htm	NFESC Port Hueneme, CA Sherrie Larson 805-982-4826 larsonsl@nfesc.navy.mil	ESTCP	
Bioventing		X		X			Hydrocarbons	Airfield	1992	Bioventing EPA 542-B-93-009 (p 35)	Battelle Columbus Laboratory 505 King Avenue Columbus, Ohio 43201 614-424-4698	U.S. Navy PWD	X
Enhanced Bioremediation	X						TCE, PCE, DCE	Dry Cleaning Site		"Field Application of a Lactic Acid Ester for PCE Bioremediation," <i>Engineered Approaches for In Situ Bioremediation of Chlorinated Solvent Contamination</i> . 1999 (p 61-66)	Montgomery Watson Des Moines, IA John K. Sheldon Regenesis San Juan Capistrano, CA Stephen S. Koenigsberg 949-366-8000		
Enhanced Bioremediation		X					MTBE	MTBE Plume, Port Hueneme, CA		"Demonstration of the Enhanced MTBE Bioremediation (EMB) In Situ Process," <i>In Situ Bioremediation of Petroleum Hydrocarbon and Other Organic Compounds</i> . 1999 (p 37-46)	Equilon Enterprises LLC [Shell/Texaco], Houston, TX J.P. Salanitro Arizona State University Tempe, AZ P.C. Johnson	U.S. Navy-NSEFC	
Enhanced Bioremediation	X						TCE	Edwards AFB, CA	1996	"Full-Scale Evaluation of In Situ Cometabolic Degradation of Trichloroethylene in Ground- water through Toluene Injection," <i>ES&T</i> , 32:1 (p 88-100)	Stanford University Perry L. McCarty mccarty@cive.stanford.edu	USAF/HSRC/ USEPA-RSKRL	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
<i>In Situ Biological</i>													
Enhanced Bioremediation	X						TCE, PCE, cis-1,2-DCE	Manufacturing Facility/ Superfund Site	1998	"Pilot Study for Enhanced Biodegradation of Chlorinated VOCs," <i>Engineered Approaches for In Situ Bioremediation of Chlorinated Solvent Contamination</i> . 1999 , (p 135-140)	ARCADIS Geraghty & Miller Dublin, OH James J. Reid 614-764-2310		
Enhanced Bioremediation	X						Chlorinated Solvents	Naval Air Station Fallon (NASF), NV	Open	<i>Demonstration of Bioaugmentation at Naval Air Station Fallon (NASF), Nevada</i> [fact sheet] www.estcp.org/projects/cleanup/remediation/199914o.htm	AFRL/MLQE Tyndall AFB, FL Major Tim Wiley 850-283-6299 tim.wiley@mlq.af.mil	ESTCP	
Enhanced Bioremediation		X					Gasoline, BTEX	Naval Weapons Station, Seal Beach	Open	<i>Enhanced In Situ Anaerobic Bioremediation of Fuel Contaminated Groundwater</i> [fact sheet] www.estcp.org/projects/cleanup/remediation/199522o.htm	NFESC Port Hueneme, CA Carmen Lebron 805-982-1616 lebronca@nfesc.navy.mil	ESTCP	
Enhanced Bioremediation	X						TCE, PCE	Watertown, MA	1998	"Passively Enhanced In Situ Biodegradation of Chlorinated Solvents," <i>Engineered Approaches for In Situ Bioremediation of Chlorinated Solvent Contamination</i> . 1999. (p 121-127)	Harding Lawson Assoc. Maureen A. Dooley Wakefield, MA 781-245-6606 Regenesis San Juan Capistrano, CA Stephen S. Koenigsberg 949-366-8000		
Enhanced Bioremediation		X		X			Hydrocarbons	Airfield	1993	<i>Augmented In Situ Subsurface Bioremediation Process, Bio-Rem, Inc.</i> EPA 540-MR-93-527	Bio-Rem, Inc. P.O. Box 116 Butler, IN 46721 219-868-5823	USEPA-NRMRL	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
<i>In Situ Biological</i>													
Enhanced Bioremediation	X						TCE, PCE	Cape Canaveral Air Station, FL & 4 Unspecified DoD Sites	Open	<i>Treatability Test for Reductive Anaerobic Biological In-Situ Treatment Technology (RABITT)</i> [fact sheet]	AFRL/MLQE Tyndall AFB, FL Major Tim Wiley 850-283-6299 tim.wiley@mlq.af.mil	ESTCP	
Enhanced Bioremediation	X						TCE, PCE, cis-1,2-DCE	Unidentified Site in FL	1998	"A Pilot Study Using HRC™ to Enhance Bioremediation of CAHs," <i>Engineered Approaches for In Situ Bioremediation of Chlorinated Solvent Contamination</i> . 1999 (p 177-180)	Water Restoration, Inc. Fort Lauderdale, FL Madeleine Wu		
Enhanced Bioremediation		X					BTEX	Former Fueling Facility, Homer, AK	1993	"The Use of Oxygen Release Compound for Groundwater Bioremediation in Alaska," <i>7th ACS Special Symposium</i> . 1995 (p 917)	Hart Crowser Anchorage, AK H.J. Marlow		
Enhanced Bioremediation		X					BTEX	Formerly JimBo's Gas N'Goodies, Aiken, SC	1999	<i>PHOSter Bioremediation Technology: Award- Winning Technology Demonstrated in Downtown Augusta</i>	Southeastern Technology Center (STC) Jim Ullery 706-722-3490 JUllery@setechctr.org	STC/USDOE-SR	
Enhanced Bioremediation	X						TCE, VC, cis-1,2-DCE	UST site 23, Naval Air Station Point Mugu, CA	1999	"Accelerated In Situ Bioremediation of Chlorinated Ethenes in Groundwater with High Sulfate Concentrations," <i>Engineered Approaches for In Situ Bioremediation of Chlorinated Solvent Contamination</i> . 1999, (p 165-170)	Battelle PNWD Richland, WA Christian D. Johnson Naval Construction Battalion Ctr. Port Hueneme, CA Steve Granade	DoD Installation Restoration Program	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
<i>In Situ Biological</i>													
Enhanced Bioremediation	X	X			X		As, VOCs	Former Municipal Landfill, Dover, NH	Open	"Sequential Anaerobic/ Aerobic In Situ Treatment System," <i>Tech Trends</i> , Aug 1999	Envirogen Craig Lizotte 781-821-5560 lizotte@envirogen.com State of New Hampshire, Dept. of Environmental Services Andrew Hoffman 603-271-6778 a_hoffman@des.state.nh.us	State of NH-DES	
Enhanced Bioremediation	X	X					PCE,TCE, 1,1-DCE, BTEX	Dry Cleaning Facility	1999	"Induced Cometabolism of Chlorinated VOCs Using Propane," <i>Engineered Approaches for In Situ Bioremediation of Chlorinated Solvent Contamination</i> . 1999. (p 1-6)	Parsons Engineering Science, Inc. Cincinnati, OH Peter I. Dacyk William D. Hughes		
Enhanced Bioremediation	X						TCE, TCA	ITT Industries Night Vision Plant, Roanoke, VA	Open	"Air Flow in Fractured Bedrock for In-Situ Groundwater Bioremediation," <i>Engineered Approaches for In Situ Bioremediation of Chlorinated Solvent Contamination</i> . 1999 (p 255-261)	ITT Industries, Roanoke, VA Rosann Kryczkowski 540-362-7356 Earth Tech, Roanoke, VA Gregory L. Carter 540-563-4193	USEPA SITE Program	
Enhanced Bioremediation		X					BTEX	Former Oil Depot, Drummondville, QC	1995	<i>In Situ Flushing: Technology Status Report</i> GWR TAC TS-98-01 (p 75-77)	Serrener Consultation Inc. 855, rue Pepin, bureau 200 Sherbrooke Quebec, J1L 2P8, Canada Arnold Ross 819-829-0101	NRC of Canada/ Env. Canada/ Ministry of Env. of Ouebec/Serrener- Varisco Consortium	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
<i>In Situ Biological</i>													
Enhanced Bioremediation	X						TCE, PCE	Natural Gas Pipeline Compressor Station, VA	1998	"Full-Scale In Situ Cometabolic Bioremediation at a Pipeline Site," <i>Engineered Approaches for In Situ Bioremediation of Chlorinated Solvent Contamination</i> . 1999 (p 113-119)	Radian International Austin, TX Robert Legrand 512-454-4797	USDOE/Gas Research Institute	
Enhanced Bioremediation	X						TCE	Unidentified Site, Lansing, MI	1998	"Cometabolic Degradation of Trichloroethylene Using a Full-Scale Integrated Bioprocessing System," <i>Engineered Approaches for In Situ Bioremediation of Chlorinated Solvent Contamination</i> . 1999 (p 217-223)	Global Remediation Technologies, Inc. 1235 Woodmere Traverse City, MI 49686 Jian Xing		X
Permeable Reactive Barrier (O ₂ via Biosparging)		X					BTEX	East Garrington Gas Plant, Alberta, Canada	Open	Permeable Reactive Barrier Installation Profiles www.rtdf.org/	Komex International Ltd. Calgary, Alberta, Canada Marc Bowles 403-247-0200 mbowles@calgary.komex.com	U. of Calgary/ Waterloo Centre for GW Rsch/ Amoco/Shell	
Permeable Reactive Barrier (Compost Based)					X		Cd, Ni, Pb, Zn	Sulfide Mineral Ore Storage Site, Greater Vancouver, Western Canada		"Remediation of a Heavy Metal Plume Using a Reactive Wall," <i>Bioremediation of Metals and Inorganic Compounds</i> . 1999 (p 17-24)	Conor Pacific-WTI Burlington, Canada Rick McGregor 604-669- 3373	Environment Canada	
Phytoremediation	X						TCE	Air Force Plant 4, Fort Worth, TX	Open	<i>Plant Enhanced Bioremediation of Contaminated Soil and Groundwater</i> [fact sheet] www.estcp.org/projects/cleanup/remediation/199519o.htm	ASC/EMR Wright-Patterson AFB, OH Gregory Harvey 937-255-7716 ext. 302 harveygj@emsmtf.wpafb.af.mil	ESTCP	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
<i>Ex Situ Physical/Chemical</i>													
Groundwater Extraction & Air Stripping	X						TCE, PCE, DCE,	Landfill Disposal Pit, USTs	1993	<i>Pump and Treat of Contaminated Groundwater at Operable Unit B/C McClellan Air Force Base, CA</i> EPA 542-R-95-001 (p 48)		USEPA Region 9	
Groundwater Extraction & Air Stripping		X					BTEX	Underground Storage Tanks	1994	<i>Recovery of Petroleum Product , Fort Drum, Fuel Dispensing Area 1595, Watertown, New York</i> EPA542-R-95-001 (p 42)		U.S. Army- Fort Drum	
Groundwater Extraction & Air Stripping	X						TCE, PCE, DCE,	Disposal Pit	1993	<i>Pump and Treat of Contaminated Groundwater at Operable Unit D McClellan Air Force Base, CA</i> EPA 542-R-95-001 (p 50)		USEPA Region 9	
Groundwater Extraction & Oxidation	X						PCB, PCE, DCE	Industrial	1994	<i>Pump and Treat of Contaminated Groundwater at US DOE, Kansas City Plant, Kansas City, MO</i> EPA 542-R-95-001 (p 54)	Allied Signal, Inc.	USDOE Environmental Restoration	
High-Energy Electron Irradiation	X						Chlorinated Solvents and Fuels	Savannah River Site	1994	<i>High Voltage Environmental Applications Incorporated, Electron Beam Technology</i> EPA 540-R-96-504	High Voltage Environmental Applications, Inc. 9562 Doral Blvd., Miami, FL 33178 305-593-5330	USEPA-NRMRL	X
Membrane Filtration					X		Metals	Zinc Superfund Site	1990	<i>E.I. Dupont De Nemours and Oberlin Filter Co. - Microfiltration Technology</i> EPA 540-A5-90-007	E.I. De Nemours Co. & Oberlin Filter Co. 1007 Market Street, Wilmington, DE 19898 302-774-2277	USEPA-NRMRL	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
Ex Situ Physical/Chemical													
Membrane Filtration					X		Hazardous Waste	Central Landfill, Johnston, RI	1994	<i>Disc Tube™ Module Technology, Rochem Separation Systems, Inc.</i> EPA 540-MR-96-507	Rochem Separation Systems, Inc. 3904 Del Amo Blvd., Suite 801, Torrance, CA 90503 310-370-3160	USEPA-NRMRL	
Oxidation	X						TCE	DOE Kansas City Plant		<i>Ultraviolet Radiation, Hydrogen Peroxide, and Ozone, Trichloroethylene in Ground Water</i> EPA 542/B-93/009 - Oct 93 (p 230)	Oak Ridge National laboratory P.O. Box 2008 Oak Ridge, TN 37831-6317 423-574-8581	USDOE-ORNL	
Pervaporation	X	X					Solvents, Degreasers, Gasoline	Naval Air Station North Island, San Diego, CA	1995	<i>Cross-flow Pervaporation Technology, Zenon Environmental, Inc.</i> EPA 540-R-95-511	Zenon Environmental Inc. 845 Harrington Ct. Burlington, Ontario, Canada 905-639-6320	USEPA/U.S. Navy/ Env. Canada/ Ontario Ministry of Env. & Energy	
Photocatalytic Aqueous Phase Organics Destruction	X	X					TCE, PCE, BTEX	Oak Ridge, TN	1995	<i>Photocatalytic Aqueous Phase Organics Destruction Process</i> EPA 540-R-97-503	Matrix Photocatalytic Ltd. London, Ontario Robert Henderson 519-660-8669	USEPA-NRMRL	
Photochemical Oxidation	X						TCE, PCE, DCA	Tracy, CA Site	1992	<i>Demonstration of Peroxidation Systems, Inc.</i> EPA 542-R-95-006 (p 24)		USEPA-NRMRL	
Photochemical Oxidation	X		X				TCE, VOCs, SVOCs	Airfield		<i>Phase Transfer Oxidation</i> EPA 542-R-95-006 (p 26)		USAF, Armstrong Laboratory	
Polishing Filter					X		Metals, Radionuclides	Rocky Flats Plant	1993	<i>Colloid Polishing Filter Method, Filter Flow Technology, Inc.</i> EPA 540-MR-94-501	Filter Flow Technology, Inc. 22 Texas Avenue League City, Texas 77573 713-332-3438	USEPA-NRMRL	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
<i>Ex Situ Physical/Chemical</i>													
Separator - Filter - Coalescer		X		X			Hydrocarbons	Petroleum Products Corp. Site, FL	1994	North America Technologies Group, Inc., SFC Oleofiltration System EPA 540-MR-94-525	North American Technolo- gies Group, 3316 Corbin Way Sacramento, CA 95827 916-366-7873	USEPA-NRMRL	
Solar Detoxification	X	X					VOCs	Lawrence Livermore Lab	1987	Solar Detoxification EPA 542-B-93-009 (p 74)	Lawrence Livermore Lab P.O. Box 808 MS L-207 Livermore, CA 94550 510-422-3521	USEPA-NRMRL	
Spray Irrigation	X						TCE, TCA, CT, EDB, PCE	Hastings, NE	1996	Sprinkler Irrigation as a VOC Separation and Disposal Method EPA 540-R-98-502	University of Nebraska at Lincoln Hastings, NE 402-783-3931	USEPA-NRMRL	
UV Irradiation	X						PCE, TCE, TCA	Savannah River Test Site		Integrated Pulsed Ultraviolet Irradiation DOE/EM-0248 (p 213)	Purus, Inc. 2713 North First Street San Jose, CA 95134 408-955-1000	USDOE	X
UV Oxidation						X	Explosives	Army Depot	1994	Evaluation of UV Methods for the Remediation of Explosives in Groundwater SFIM-AEC-ETCR-95068	Purifics, Inc. Solarchena Ultrex (Zimpro) Vulcan Peroxide System, Inc.	U.S. Army EC	
UV Oxidation	X						Halogenated VOCs	Barrel & Drum Company	1989	Ultrox International - Ultravio- let Ozone Treatment for Liquids EPA 540-A5-89-012	Ultrox, A Division of Zimpro Environmental 2435 South Anne Street Santa Ana, CA 92704 714-545-5557	USEPA-NRMRL	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
Ex Situ Physical/Chemical													
UV Oxidation	X	X					TCE, BTEX	Airfield	1993	Magnum Water Technology - CAV - OX Ultraviolet Oxidation Process EPA 540-AR-93-520	Magnum Water Technology 600 Lairport Street El Segundo, CA 90245 310-322-4143	USEPA-NRMRL	
In Situ Physical/Chemical													
Adsorption/ Microfiltration						X	Arsenic	Mining Site, MT	1997	"Technologies For Decontam- inating Water: Arsenic," [section 10.1.1] ETC Biennial Report: April 1, 1996 to March 31, 1998 Rpt. No. DO 1-97/98	Zenon Environmental Inc. 845 Harrington Ct. Burlington, Ontario, Canada 905-639-6320	Env. Canada/ Zenon Env.	
Advanced Oxidation Process		X		X			Hydrogen Peroxide, Various Fuels	Lakehurst, New Jersey	1991	Advanced Oxidation Process, VOCs in Ground Water EPA 542-B-93-009 (p 185)	Illinois State Water Survey 2204 Griffith Drive Champaign, IL 61820-7495 217-333-5905	NFESC	
Advanced Oxidation Process						X	TNT, RDX	Bangor SUBASE	1993	Advanced Oxidation Process, VOCs in Ground Water EPA 542-B-93-009 (p 183)	Oak Ridge National Laboratory 560 Laboratory Drive Port Hueneme, CA 93043- 4328 805-982-1616	NFESC	
Air Sparging/ Vapor Extraction	X	X					VOCs	DOE Mound Facility, Miamisburg, OH	1997	Demonstrated Air Sparging/ Vapor Extraction... www.ohio.doe.gov/oh-stcg/	DOE Ohio Sites Technol- ogy Coordination Group (STCG) Miamisburg James Johnson 937-847-5234 james.o.johnson@em.doe.gov	USDOE-Ohio STCG	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Air Sparging		X					BTEX	Gas Station	1991	<i>Lessons Learned About In Situ Air Sparging at the Denison Ave Site, Cleveland Ohio</i> EPA 600-R-95-040	B.P. Exploration and Oil, Inc.: Engineering Science Co.	USEPA Region 5	
Air Sparging	X	X	X	X			Chlorinated Compounds, Petroleum	Port Hueneme, CA and Other Sites	Open	<i>Air Sparging: Technology Transfer and Multi-Site Evaluation</i> [fact sheet] www.estcp.org/projects/cleanup/remediation/199808o.htm	AFRL/MLQE 139 Barnes Drive, Suite 2 Tyndall AFB, FL 32403-5323 Major Tim Wiley 850-283-6299 tim.wiley@mlq.afrl.af.mil	ESTCP	
Air Stripping	X						TCE, PCE, TCA	Surface Impoundment Site	1993	<i>In Situ Air Stripping of Contaminated Groundwater at US DOE, Savannah River Site, Aiken SC</i> EPA 542-R-95-001 (p 58)	Westinghouse Savannah River Co. P.O. Box 616, Building 773-42A Aiken, SC 29802 803-725-5181	USDOE-Savannah River	
Air Stripping	X						TCE, PCE	Savannah River Site		<i>The Savannah River Integrated Demonstration Program</i> MSSRC-MS-91-290	Westinghouse Savannah River Co. P.O. Box 616, Building 773-42A Aiken, SC 29802 803-725-5181	USDOE-Savannah River	
Air Stripping/ Vapor Extraction	X						Chlorinated Solvents	Savannah River Site	1990	<i>In Situ Air Stripping with Horizontal Wells</i> EPA 542-B-93-009 (p 120)	Westinghouse Savannah River Co., P.O. Box 616 Building 773-42A Aiken, SC 29802 803-725-5181	USDOE-Savannah River	
Catalytic Decontamination	X						VOCs	Fort Dix New Jersey		<i>Catalytic Decontamination, Volatile Organic Compounds (VOCs) in Ground Water</i> EPA 542-B-93-009 (p 188)		U.S. Army-CERL	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Chemical Oxidation	X	X					VOCs	Lawrence Livermore Site 300	1992	<i>Perox-Pure Chemical Oxidation Technology, Peroxidation Systems</i> EPA 540-AR-93-501	Calgon Carbon Corp. 800-422-7266 (Was Vulcan Peroxidation Systems, Inc.)	USEPA-NRMRL	
Chemical Oxidation (C-Sparge™)	X						PCE	Dry Cleaning Facilities, Hutchinson, KS	1997	<i>In Situ Chemical Treatment: Technology Evaluation Report</i> GWRTAC TE-99-01 (p 35)	Burns & McDonnell Wichita, KS Douglas Dreiling 316-941-3921 Kansas Dept. of Health & Env. Leo G. Henning 785-296-1914	KS DHE	
Chemical Oxidation	X						TCE	Kennedy Space Flight Center, Cape Canaveral, FL	Open	"DNAPL Interagency Agreement (Work Package #SS06)," <i>SCFA Midyear Review Report and Supporting Documentation, 1999</i> www.envnet.org/envnet/scfa/rep%2Dpub/midyr99/results.htm	Steve Antonioli. PI	USDOE/DOD/ USEPA/NASA	
Chemical Treatment					X		Metals	Lead Site	1994	<i>SITE Technology Capsule - Dynaphore Inc., Forager Sponge Technology</i> EPA 540-R-94-522a	Dynaphore, Inc. 2709 Willard Road Richmond, VA 23294 804-288-7109	USEPA-NRMRL	X
Circulation Wells (NoVOCs™)	X						PCE	Dry Cleaning Facilities, Hutchinson, KS	1997	<i>Field Applications of In Situ Remediation Technologies: Ground-Water Circulation Wells</i> EPA 542-R-98-009 (p 28)	Burns & McDonnell 3839 Dora Wichita, KS 67213 Douglas Dreiling 316-941-3921	KS Dept. of Health & Environ., Topeka, KS lhenning@kdhe.state.ks.us	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Circulation Wells (UVB™)	X	X					TCE, fuels	Operable Unit 6, Hill AFB, Ogden, UT	1996	<i>Technology Performance and Application Analysis of UVB Groundwater Circulating Well Technology, Operable Unit 6, Hill AFB.</i> Radian Corp., 1996	Naval Research Laboratory 4555 Overlook Avenue, S.W., Code 6115 Washington, D.C. 20375 Dr. Barry Spargo 202-404-6392 bspargo@ccf.nrl.navy.mil	ESTCP	
Circulation Wells (C-Sparge™)	X						PCE	Dry Cleaning Facilities, Hutchinson, KS	1997	<i>Field Applications of In Situ Remediation Technologies: Ground-Water Circulation Wells</i> EPA 542-R-98-009 (p 28)	Burns & McDonnell 3839 Dora Wichita, KS 67213 Douglas Dreiling 316-941-3921	KS Dept. of Health & Environ., Topeka, KS lhenning@kdhe.state.ks.us	
Circulation Wells (UVB™)	X						TCE, other solvents	CS-10 South, Massachusetts Military Reservation, Cape Cod, MA	1996	<i>Field Applications of In Situ Remediation Technologies: Ground-Water Circulation Wells</i> EPA 542-R-98-009 (p 9)	OTIS ANGB, MA 0242-5028 Spence Smith 508-968-4670 ext.5603 spence.smith@mnr.brooks.af.mil	USAF/AFCEE/ERT	
Circulation Wells, Horizontal, w/ Zero-Valent Iron and Activated Carbon Enhancements	X					X	TCE, Tc-99	X-701B Site, Portsmouth Gaseous Diffusion Plant, Piketon, OH	1996	<i>In Situ Treatment of Mixed Contaminants in Groundwater: Treatment of Groundwater Contaminated with Trichloroethene and Technetium-99</i> ORNL/TM-13530	Oak Ridge National Laboratory at Grand Junction, CO Nic Korte 970-248-6210 nek@ornl.gov	USDOE-ORNL	
Circulation Wells (Modified Bioventing Well (MBW))							TPH	Tyndall AFB, FL	1995	<i>Field Applications of In Situ Remediation Technologies: Ground-Water Circulation Wells</i> EPA 542-R-98-009 (p 13)	Battelle 505 King Ave. Columbus, OH 43201 Bruce C. Alleman 614-424-5715 allemanb@battelle.org	USAF	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Circulation Wells	X						TCE	Edwards AFB, CA	1996	<i>Field Applications of In Situ Remediation Technologies: Ground-Water Circulation Wells</i> EPA 542-R-98-009 (p 4)	Battelle Pacific Northwest Laboratory Richland, WA 99352 Tyler J. Gilmore 509-376-2370 tyler.gilmore@pnl.gov	USAF/USDOE	
Circulation Wells (Density Driven Convection (DDC))			X				PCP	Wood Treatment Facility, Denver, CO	1996	<i>Field Applications of In Situ Remediation Technologies: Ground-Water Circulation Wells</i> EPA 542-R-98-009 (p 30)	EMKO Environmental 2329 Shortlidge Ct. El Dorado Hills, CA 95762 Andrew Kopania 916-939-0133 akopania@aol.com		
Circulation Wells (Modified Coaxial Ground-Water Circulating System (mKGB))		X					TPH	Tyndall AFB, FL	1995	<i>Field Applications of In Situ Remediation Technologies: Ground-Water Circulation Wells</i> EPA 542-R-98-009 (p 13)	Battelle 505 King Ave. Columbus, OH 43201 Bruce C. Alleman 614-424-5715 allemanb@battelle.org	USAF	
Circulation Wells		X					TPH, BTEX	Keesler AFB, MS	1997	<i>Field Applications of In Situ Remediation Technologies: Ground-Water Circulation Wells</i> EPA 542-R-98-009 (p 6)	AFCEE/ERT Technology Transfer Div. 3207 North Rd.—Bldg. 532 Brooks AFB, TX 78235 James R. Gonzales 210-536-4324 jamesgonzales@hq.afceebrooks.afm	USAF/AFCEE/ERT	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Circulation Wells (NoVOCs™)	X						TCE	Edwards Air Force Base, CA		"Rising Bubbles Lower Costs: In-Well Treatment of VOCs Keeps Water Down- Hole with Gas Injection and Water Reinfiltration," <i>Soil & Ground- water Cleanup</i> www.sgcleanup.com	Stanford University Battelle Pacific Northwest Laboratory Metcalf & Eddy Somerville, NJ Edward Cichon	USAF	
Circulation Wells (UVB™-400)	X	X					TCE, DCE, PCE, Acetone, MEK, MIBK	Sweden-3 Chapman Superfund Site, Sweden, NY	1995	"Demonstration of Microbio- logically Enhanced Vertical Ground Water Circulation Well Technology at a Superfund Site," <i>Ground Water Monitoring Review</i> , Spring 1998 (p 97-106) See also EPA 540-R-99-001	SBP Technologies, Inc. White Plains, NY Richard Desrosiers 914- 694-2280	NY State DEC, Albany, NY	
Circulation Wells (NoVOCs™)	X						TCE, other solvents	CS-10 North, Massachusetts Military Reserva- tion, Cape Cod, MA	1996	<i>Field Applications of In Situ Remediation Technologies: Ground-Water Circulation Wells</i> EPA 542-R-98-009 (p 9)	OTIS ANGB, MA 0242-5028 Spence Smith 508-968-4670 ext.5603 spence.smith@mmr.brooks.af.mil	USAF/AFCEE/ BRT	
Circulation Wells (UVB™ varia- tions)		X					BTEX	Port Hueneme Naval Exchange Site, CA	1995	<i>Field Applications of In Situ Remediation Technologies: Ground-Water Circulation Wells</i> EPA 542-R-98-009 (p 12)	Naval Research Laboratory Washington, DC Barry Spargo 202-404-6392 bspargo@ccf.nrl.navy.mil	U.S. Navy-NRL	
Circulation Wells	X						TCE, PCE	Westinghouse Savannah River Site, Aiken, SC	1996	<i>Airlift Recirculation Well Test Results, Southern Sector</i> WSRC-TR--97-00246	Westinghouse Savannah River Co. Aiken, SC Roger White 803-725-1314 roger.white@srs.gov	USDOE-WSRC	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Cosolvent Flushing	X						PCE	Former Sage's Dry Cleaners, Jacksonville, FL	1998	"DNAPL Flushing with Alcohol," <i>Groundwater Currents</i> , June 1999	University of Florida Gainesville, FL Dr. Michael Annable 352-392-3294 manna@engnet.ufl.edu	USEPA/State of FL Dry Cleaning Program & Center for Solid & Haz. Waste Mgmt.	
Cosolvent Flushing	X	X	X	X			BTEX, TCE, TCA, PCE, PAH	Test Site - Hill Air Force Base, Utah	1994	<i>Field Scale Evaluation of In Situ Cosolvent Flushing</i> Evaluation Report	University of Florida Gainesville, FL 32611 904-392-3294	USEPA-RSKRL	
Cosolvent Flushing (SPME)		X		X			Decane, 1,3,5-Trimethylbenzene, Undecane	OU-1 Test Cells, Hill AFB, UT	1996	<i>Single-Phase Microemulsions (SPME) for Enhanced Remediation of Aquifers</i> AATDF TR-98-2; TR-98-5	University of Florida Dr. Mike Annable 352-392-3294 manna@engnet.ufl.edu	AATDF/SERDP	
Density-Driven Groundwater Sparging and SVE							BTEX, TPH	Underground Storage Tanks	1993	<i>Density-Driven Groundwater Sparging at Amcor Precast, Ogden, Utah</i> EPA 542-R-95-001 (p 38)	Wastach Env., Inc 2251B West California Ave., Salt Lake City, UT 84104 801-972-8400	Utah DEQ	
Electrochemical Reduction and Immobilization						X	Sodium Dichromate	Kerr-McGee Chemical Corp.	1992	<i>Electrochemical Reduction and Immobilization</i> EPA 542-B-93-009 (p 197)	Andco Environmental 595 Commerce Drive Amherst, NY 14228 716-691-2100	USEPA-NRMRL	
In Situ Redox Manipulation (ISRM)						X	Cr(VI)	100 HR-3 Operable Unit, Hanford Reservation, WA	1998	<i>In Situ Redox Manipulation</i> [fact sheet] www.envnet.org/envnet/scfa/tech/mrr/factsheets/redoxman.htm	PNNL John Fruchter, PI 509-376-3937 js_fruchter@pnl.gov	USDOE	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
In-Well Vapor Stripping	X	X	X	X			VOCs	Savannah River Site, Aiken, SC	1990	"In-Well Vapor Stripping (TMS #6)," <i>Highlights of FY 1998 Achievements</i> www.envnet.org/envnet/scfa/rep%2Dpub/annlrep98/fy98.htm	DOE Oak Ridge Elizabeth Phillips, Product Line Manager 423-241-6172 phillipsec@oro.doe.gov	USDOE	
Multi-Phase Extraction (HVDPE)		X					LNAPL	LUST Site, Holloman AFB, NM		"Optimizing LNAPL Recoveries Using Combined Extraction Technologies," <i>In Situ Bioremediation of Petroleum Hydrocarbon and Other Organic Compounds</i> . 1999 (163-168)	U.S. Air Force Holloman AFB, NM Drew F. Lessard	USAF	
Multi-Phase Extraction	X						Chlorinated Solvents	Selected DoD Sites	Open	<i>Surfactant Enhanced DNAPL Removal</i> [fact sheet] www.estcp.org/projects/cleanup/remediation/199714o.htm	NFESC Port Hueneme, CA Laura Yeh 805-982-1660 yehsl@nfesc.navy.mil	ESTCP	
Multi-Phase Extraction	X						TCE, PCE, Freon 113	Investigate Cluster 1, Operable Unit B, McClellan AFB	1995	<i>2-Phase Extraction from Soil and Groundwater</i> [fact sheet] www.mcclellan.af.mil/EM/TECH/sd_2phas.htm [An EPA SITE Program document will be produced.]	Xerox Two Phase Extraction Ron Hess 716-422-3694 McClellan AFB, CA Phil Mook 916-643-5443 mookphil@sma1.mcclellan.af.mil	USAF- McClellan AFB/USEPA/ Cal-EPA	
Multi-Phase Extraction	X						TCE, PCE, 1,2-DCE	Defense Supply Center Acid Neutralization Pit, Richmond, VA	1998	<i>Multi-Phase Extraction: State-of-the-Practice</i> EPA 542-R-99-004 (p 23-40)	Law Engineering and Environmental Services, Inc. Kennesaw, GA Katy Allen 770-421-3400		

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Multi-Phase Extraction	X						TCE, PCE, Freon 113	Investigate Cluster 1, Operable Unit B, McClellan AFB	1995	2-Phase Extraction from Soil and Groundwater [fact sheet] www.mcclellan.af.mil/EM/TECH/sd_2phas.htm [An EPA SITE Program document will be produced.]	Xerox Two Phase Extraction Ron Hess 716-422-3694 McClellan AFB, CA Phil Mook 916-643-5443 mook.phil@smal.mcclellan.af.mil	USAF-McClellan AFB/USEPA/Cal-EPA	
Permeable Reactive Barrier (Iron & ORC)	X	X					cDCE, VC, TCE, BTEX	U.S. Naval Air Station, Alameda, CA	Open	Permeable Reactive Barrier Installation Profiles www.rtdf.org/	Michaye McMaster Beak International Inc. Guelph, Ontario, Canada 519-763-2325 mmcmaster@beak.com	U.S. Navy	
Permeable Reactive Barrier (Iron)	X						TCE, VC	Somersworth Sanitary Landfill, NH		Permeable Reactive Barrier Installation Profiles www.rtdf.org/	U.S. EPA, Region 1 Boston, MA Roger Duwart 617-573-9628 duwart.roger@epa.gov	USEPA	
Permeable Reactive Barrier (Iron)	X						TCE, cDCE, VC, Freon 113	Intersil Semiconductor Site, Sunnyvale, CA	Open	"Zero-Valent Metals Provide Possible Solution to Groundwater Problems," <i>Chemical & Engineering News</i> , 73:27 (p 19-22) 1995	Geomatrix Consultants, Inc. San Francisco, CA Carol Yamane 415-434-9400 cyamane@geomatrix.com		
Permeable Reactive Barrier (Iron)	X						PCE, TCE, DCE	Area 5, Dover AFB, DE	Open	NATO/CCMS Pilot Study: Evaluation of Demonstrated & Emerging Technologies... EPA 542-R-98-002(p 36-37)	Air Force Research Laboratory Tyndall Air Force Base, Florida Lt. Dennis O'Sullivan 850-283-6239	SERDP	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Permeable Reactive Barrier (Iron)	X						PCE, TCE	CS-10 Plume, Mass. Military Reservation, Falmouth, MA	Open	Permeable Reactive Barrier Installation Profiles www.rtdf.org/	University of Waterloo Waterloo, ON Canada Robert W. Gillham 519-888-4658 rwgillha@sciborg.uwaterloo.ca	ESTCP/U. of Waterloo	
Permeable Reactive Barrier (Iron) w/ Ultrasound Enhancement	X						TCE, DCE, VC	Launch Complex B, Cape Canaveral Air Center, FL	1999	Permeable Reactive Barrier Installation Profiles www.rtdf.org/	U.S. Air Force Center for Environmental Excellence Brooks AFB, TX Major Edward Marchand 210-536-4364	NASA/U. of Central FL	
Permeable Reactive Barrier (Iron & Gravel)					X		U, Tc, HNO3	ORNL, Oak Ridge, TN	Open	<i>Research and Application of Permeable Reactive Barriers.</i> DOE, 1998 (p 12) www.gwrtac.org/	Oak Ridge National Laboratory Oak Ridge, TN Baohua Gu 423-574-7286 b26@ornl.gov	USDOE-ORNL	
Permeable Reactive Barrier (Zeolite)					X		Cs, Sr	ORNL, Oak Ridge, TN	Open	<i>Research and Application of Permeable Reactive Barriers.</i> DOE, 1998 (p 12) www.gwrtac.org/	Oak Ridge National Laboratory Oak Ridge, TN Baohua Gu 423-574-7286 b26@ornl.gov	USDOE-ORNL	
Permeable Reactive Barrier (Granular Iron)					X		U, As, Se, Zn, Ra-226, Mo, Mn	Bodo Canyon Disposal Cell Mill Tailings Site, Durango, CO	1999	"In Situ Remediation of Uranium Contaminated Groundwater," <i>Containment 1997</i> DE98-001967 (p 835-843)	Sandia National Laboratory Albuquerque, NM Brian Dwyer 505-845-9894 BPDwyer@sandia.gov	USDOE-SNL	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Permeable Reactive Barrier (AFO)					X		U	Uranium Mine Tailings Site, Fry Canyon, UT	1999	Permeable Reactive Barrier Installation Profiles www.rtdf.org/	USGS District Office - Salt Lake City, UT David L. Naftz 801-975-3389 dlnaftz@usgs.gov	USGS	
Permeable Reactive Barrier (Phosphate)					X		U	Uranium Mine Tailings Site, Fry Canyon, UT	1999	Permeable Reactive Barrier Installation Profiles www.rtdf.org/	USGS District Office - Salt Lake City, UT David L. Naftz 801-975-3389 dlnaftz@usgs.gov	USGS	
Permeable Reactive Barrier (Iron)	X						TCE, VC, cDCE	Confidential Site, Central NY State	1995	<i>Metal-Enhanced Dechlorination of Volatile Organic Compounds Using an In-Situ Reactive Iron Wall</i> EPA 540-R-98-501	EnviroMetal Technologies, Inc. Guelph, Ontario John Vogan 519-824-0432	USEPA-NRMRL	
Permeable Reactive Barrier (Zeolite)	X				X		PCE, Cr(VI)	LEAP Permeable Barrier Demonstration Facility, Portland, OR	1998	<i>Field Applications of In Situ Remediation Technologies: Permeable Reactive Barriers</i> EPA 542-R-99-002 (p 39)	New Mexico Tech Socorro, NM Robert Bowman 505-835-5992 bowman@nmt.edu	USDOE-METC	
Permeable Reactive Barrier	X	X					NAPLs, DNAPLs	X-231A Site, Portsmouth Gaseous Diffusion Plant, OH	1998	<i>X-231A: A Demonstration of In-Situ Remediation of DNAPL Compounds in Low Permeability Media by Soil Fracturing with Thermally Enhanced Mass Recovery or Reactive Barrier Destruction: Dense Non-Aqueous Phase Liquids</i> ORNL/TM-13534	ORNL/Colorado School of Mines R.L. Siegrist rsiegris@mines.edu	USDOE SCFA	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Permeable Reactive Barrier (Organic Carbon)					X		Ni, Fe, Sulfate	Nickel Rim Mine Site, Sudbury, Ont., Canada	Open	"Porous Reactive Wall for Prevention of Acid Mine Drainage: Results of a Full-Scale Field Demonstration," <i>Containment 1997</i> DE98-001967 (p 844-850)	Waterloo Centre for Groundwater Research, University of Waterloo Waterloo, Ontario, Canada David W. Blowes 519-888-4878	University of Waterloo	
Permeable Reactive Barrier (Iron Foam)					X		U, As, Se, Zn, Ra-226, Mo, Mn	Bodo Canyon Disposal Cell Mill Tailings Site, Durango, CO	1999	"In Situ Remediation of Uranium Contaminated Groundwater," <i>Containment 1997</i> DE98-001967 (p 835-843)	Sandia National Laboratory Albuquerque, NM Brian Dwyer 505-845-9894 BPDwyer@sandia.gov	USDOE-SNL	
Permeable Reactive Barrier (Iron w/ Copper Catalyst)					X		U, As, Se, Zn, Ra-226, Mo, Mn	Bodo Canyon Disposal Cell Mill Tailings Site, Durango, CO	1999	"In Situ Remediation of Uranium Contaminated Groundwater," <i>Containment 1997</i> DE98-001967 (p 835-843)	Sandia National Laboratory Albuquerque, NM Brian Dwyer 505-845-9894 BPDwyer@sandia.gov	USDOE-SNL	
Permeable Reactive Barrier		X					BTEX (Benzene and Toluene)	Borden Aquifer	1994	<i>In Situ Permeable Reaction Wall</i> Waterloo Centre for Groundwater Research EPA 542-K-94-004 (p 3)	Waterloo Centre for Groundwater Research University of Waterloo Waterloo, Ontario, Canada 519-885-1211	Center for Excellence, Ontario Canada	
Permeable Reactive Barrier	X						PCE, TCE, cDCE	SGL Printed Circuits, Wayne, NJ	1995	<i>Metal-Enhanced Dechlorination of Volatile Organic Compounds Using an Above-Ground Reactor</i> EPA 540-R-96-503	EnviroMetal Technologies, Inc. Guelph, Ontario William Matulewicz 609-722-6700	USEPA-NRMRL	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Permeable Reactive Barrier (Iron)					X		U	Uranium Mine Tailings Site, Fry Canyon, UT	1999	Permeable Reactive Barrier Installation Profiles www.rtdf.org/	USGS District Office - Salt Lake City, UT David L. Naftz 801-975-3353	USGS	
Permeable Reactive Barrier	X						TCE, PCE, DCE	NAS Moffett Field, CA	1997	"Permeable Reactive Wall Remediation of Chlorinated Hydrocarbons in Groundwater: NAS Moffett Field, Mountain View, California," <i>After the Rain Has Fallen: 2nd International Water Resources Engineering Conference</i> . 1998. (p 153-158)	USGS PROJECT UT242 U.S. Navy - NFESC 1100 23rd. Ave., Code 411 Port Hueneme, CA 93043-4370 Charles Reeter 805-982-4991 reetercv@nfesc.navy.mil	ESTCP	
Permeable Reactive Barrier	X		X				Chlorinated Hydrocarbons	Selected DoD Sites	Open	<i>Evaluation of Performance and Longevity at Permeable Reactive Barrier Sites</i> [fact sheet] www.estcp.org/projects/cleanup/remediation/199907o.htm	NFESC Port Hueneme, CA Charles Reeter 805-982-4991 DSN: 5514991 reetercv@nfesc.navy.mil	ESTCP	
Permeable Reactive Barrier	X	X	X	X	X		TCE, PCE, Am, U, Pu	Mound Site	1999	<i>RFETS Mound Plume Passive Reactive Barrier FY98 Year End Review</i> [PPT presentation] www.envnet.org/envnet/scfa/conferences/presentat98/slides/butler/index.htm	RFETS Kaiser-Hill J. Lane Butler, PI Sandia National Laboratory Brian Dwyer 505-845-9894 BPDwyer@sandia.gov	USDOE/USEPA SITE Program	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Permeable Reactive Barrier	X				X		TCE, Cr(VI)	U.S. Coast Guard Support Center, Elizabeth City, NC	Open	<i>Full-Scale Demonstration Installation - June 1996</i> earth1.epa.gov/ada/	USEPA-NRMRL Ada, OK Robert W. Puls 580-436-8543 puls.robert@epa.gov	USEPA-NRMRL	
Permeable Reactive Barrier					X		Phosphate, Nitrate	Public School, Langton, Ontario	1995	<i>Field Applications of In Situ Remediation Technologies: Permeable Reactive Barriers</i> EPA 542-R-99-002 (p 39)	University of Waterloo West Waterloo, Ontario, Canada Will Robertson 519-888-4567 ext. 6800 wroberts@sciborg.uwaterloo.ca		
Permeable Reactive Barrier (Iron & Peat Moss)	X	X	X	X	X		VOCs, Metals, Radioactive Elements	ORNL, Oak Ridge, TN	Open	<i>Metals & Radionuclides (MRR)Product Line Mission</i> www.envnet.org/scfa/tech/mrr/mrrmission.htm	Sandia National Laboratory Albuquerque, NM Brian Dwyer 505-845-9894 BPDwyer@sandia.gov	USDOE-ORNL/IT Corp.	
Permeable Reactive Barrier	X						TCE,PCE, and DCE	Canadian Forces Base Borden, Ont.	1993	<i>In Situ Permeable Reaction Wall Waterloo Centre for Groundwater Research</i> EPA 542-K-94-004 (p 2)	Waterloo Centre for Groundwater Research University of Waterloo Waterloo Ontario, Canada 519-885-1211	Center for Excellence, Ontario Canada	
Permeable Reactive Barrier	X						TCE	Lowry AFB, CO	1997	<i>Field Applications of In Situ Remediation Technologies: Permeable Reactive Barriers</i> EPA 542-R-99-002 (p 27)	Versar, Inc. 11990 Grant St., Ste. 500 Northglenn, CO 80233 William A. Gallant 303-452-5700 gallabil@versar.com	USAF	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Permeable Reactive Barrier	X				X		TCE, Cr(VI)	U.S. Coast Guard Support Center, Elizabeth City, NC	1995	<i>Remediation of Chromate- Contaminated Ground Water Using an In-Situ Permeable Reactive Mixture: Field Pilot Test, Elizabeth City, North Carolina</i> EPA 600-A-97-002	U.S. EPA-NRMRL Ada, OK Robert W. Puls 580-436-8543 puls.robert@epa.gov	USEPA-NRMRL	
Permeable Reactive Barrier	X						TCE, cDCE, CT, NO(III)	Westinghouse Savannah River Site, Aiken, SC	1998	<i>TNX GeoSiphon Cell (TGSC-1) Phase II Single Cell Deploy- ment/ Demonstration Final Report</i> WSRC-TR-98-00432	Westinghouse Savannah River Co. Aiken, SC Mark Phifer 803-725-5222 mark.phifer@srs.gov	USDOE	
Permeable Reactive Barrier	X				X		TCE, cDCE, VC	Former Plating Facility, NY	1997	<i>Field Applications of In Situ Remediation Technologies: Permeable Reactive Barriers</i> EPA 542-R-99-002 (p 37)	Stearns & Wheler One Remington Park Dr. Cazenovia, NY 13035 Diane Clark 315-655-8161 diane.clark@stearnswheler.co		
Permeable Reactive Barrier (Zeolite)					X		Sr-90	West Valley Demonstration Project Site, NY	Open	"Engineers Find Volcanic Mineral's Affinity For Stron- tium-90 Makes It Ideal Choice For West Valley Cleanup," <i>News</i> , 23 Aug 1999	State Univ. of New York at Buffalo Alan Rabideau West Valley Nuclear Services West Valley Demonstration Project Beth Fallon, Project Manager	USDOE/NY State ERDA	
Permeable Reactive Barrier	X						TCE, cDCE, CT, NO(III)	Westinghouse Savannah River Site, Aiken, SC	1997	<i>TNX GeoSiphon Cell Phase I Deployment/Demonstration</i> WSRC-TR-98-00032	Westinghouse Savannah River Co. Aiken, SC Mark Phifer 803-725-5222 mark.phifer@srs.gov	USDOE	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Permeable Reactive Barrier	X	X	X	X	X		VOCs; Metals, Radioactive Elements	Rocky Flats	Open	<i>Metals & Radionuclides (MRR)Product Line Mission</i> www.envnet.org/scfa/tech/mrr/ mrrmission.htm	Kaiser-Hill Co., LLC Rocky Flats Environmental Technology Site Golden, CO Jennifer Uhland, PI 303-966-5976 Jennifer.uhland@RFETS.gov	USDOE-RFETS/ USEPA/ USACE	
Pervaporation		X		X			Hydrocarbons	Experimental Field	1993	<i>Pervaporation of Volatile : Organic Compounds from Contaminated Groundwater</i> DESRT 20 - Apr 94	Zenon Environmental 905-639-6320	ETAD	
Precipitation/ Filtration					X		Naturally Occurring Radioactive Material	Uranium Mine	1986	<i>Precipitation/Filtration. Radionuclides in Ground Water</i> EPA 542-B-93-009 (p 214)	TechTran, Inc. 5401 Mitchelldale, Suite A4 Houston, TX 77092 713-688-2390	USEPA-NRMRL	
Separation/ Recovery (Metals)					X		Metals		1996	<i>Resource Recovery Project 3: ChromatoChem [fact sheet]</i> www.envnet.org/envnet/scfa/ tech/mrr/factsheets/ rrp-chrom.htm	ChromatoChem, Inc. (CCI) Missoula, MT International Technology Corporation Knoxville, TN	USDOE	
Separation (MAG*SEPTM)					X		Heavy Metals	Savannah River Site, Aiken, SC		<i>MAG*SEPTM [fact sheet]</i> www.envnet.org/ envnet/scfa/tech/mrr/ factsheets/magsep.htm	Argonne National Laboratory Don Johnson, PI 708-252-3392 Selentec, Inc. Barrier Member Containment Corp.	USDOE-WSRC	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Separation/ Recovery (Metals)					X		Dissolved Metals	WETO		Resource Recovery Project 4: Desalinization Systems Inc. [fact sheet] www.envnet.org/envnet/scfa/tech/mrr/factsheets/rrp-desal.htm	Desalinization Systems Incorporated (DSI) Escondido, CA	USDOE-WETO	
Separation/ Recovery (Metals) (x2)					X		Dissolved Metals	WETO		Resource Recovery Project 7: Global Technologies [fact sheet] www.envnet.org/envnet/scfa/tech/mrr/factsheets/rrp-global.htm	Global Technologies Idaho Falls, ID	USDOE-WETO	
Separation/ Recovery					X		Radionuclides	Brookhaven National Laboratory	1998	"Specialized Separation Utilizing 3M Membrane Technology," SCFA Midyear Review Report and Supporting Documentation, 1999 www.envnet.org/envnet/scfa/rep%2Dpub/midyr99/results.htm	3M Company Keith Hoffman	USDOE-FETC	
Separation/ Recovery (Metals)					X		Metals	Berkeley Pit Water	1994	Resource Recovery Project 11: TETRA Technologies [fact sheet] www.envnet.org/envnet/scfa/tech/mrr/factsheets/rrp-tetra.htm	TETRA Technologies, Inc. Houston, TX	USDOE	
Separation/ Recovery (Metals)					X		Metals, Radionuclides		1995	Resource Recovery Project 8: IBC Advanced Technologies, Inc. [fact sheet] www.envnet.org/envnet/scfa/tech/mrr/factsheets/rrp-ibc.htm	IBC Advanced Technologies, Inc. (IBC) American Fork, UT	USDOE	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Separation/ Recovery (Metals)					X		Metals, Minerals	Test Facility, Chattanooga, TN	Open	<i>Resource Recovery Project 2: ABB Combustion Engineering (ABB)</i> [fact sheet] www.envnet.org/envnet/scfa/ tech/mrr/factsheets/ prior%2Drrp.htm	ABB Combustion Engineering Chattanooga, TN DOE-Idaho David Robertson 208-526-4953 robertdw@id.doe.gov	USDOE	
Separation/ Recovery (Metals)					X		Metals, Radionuclides	Berkeley Pit Water from Butte, MT	1998	"Coal-Derived Humic Acid for Removal of Metals and Organic Contaminants," <i>Ground Water Currents</i> , March 1999	ARCTECH Inc. Chantilly, VA Dr. H.G. Sanjay 703-222-0280 envrtech@arctech.com	USDOE-WETO	
Separation/ Recovery (Metals)					X		Dissolved Metals	Berkeley Pit Water, PSI Center, Andover, MA	Open	<i>Resource Recovery Project 9: Physical Sciences Inc.</i> [fact sheet] www.envnet.org/envnet/ scfa/tech/mrr/factsheets/ rrp-psi.htm	Physical Sciences Inc. (PSI) Andover, MA	USDOE	
Separation/ Recovery (Metals)					X		Metals	Berkeley Pit Water	1994	<i>Resource Recovery Project 12: Vail Research and Technol- ogy, Inc.</i> [fact sheet on Pulsed Plasma Process] www.envnet.org/envnet/scfa/ tech/mrr/factsheets/rrp-vail.htm	Vail Research and Technology, Inc. Alexan- dria, VA Pulsed Power Technolo- gies, Inc. (PPTI) Spring Valley, CA	USDOE	
Soil Vacuum Extraction/Air Sparging (SVE/ AS) in Horizontal Wells	X						BTEX	Former Gasoline Station Near Waples Pond, DE	Open	"Delaware Tackles UST Sites with Mobile Remediation System," <i>Soil & Ground-water Cleanup Online</i> www.sgcleanup.com	Delaware Department of Natural Resources, Underground Storage Tank Branch (USTB) Matt Lesley U.S. Filter/SCHUMACHER Filters America Inc., Asheville, NC	DE DNR-USTB	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Soil Vacuum Extraction/Air Sparging (SVE/AS) w/ Biofiltration		X					BTEX	Former Retail Gasoline UST Site, DE	1996	"Delaware Tackles UST Sites with Mobile Remediation System," <i>Soil & Ground-water Cleanup Online</i> www.sgcleanup.com	Delaware Department of Natural Resources, Underground Storage Tank Branch (USTB) Matt Lesley	DE DNR-USTB	
Solution Mining (Groundwater ReInjection)					X		U	U-Contam-inated Groundwater Plume, Great Miami Aquifer, Fernald, OH	1999	<i>Ground Water Re-Injection Demonstration</i> [fact sheet] www.envnet.org/envnet/scfa/tech/mrr/factsheets/reinject.htm	MSE Technology Applications, Inc., Butte, MT Steve Antonioli, PI 406-494-7343 DOE-Idaho David Robertson 208-526-4953 robertdw@id.doe.gov	USDOE	
Steam Injection and Vacuum Extraction		X		X			JP-5 (Jet Fuel)	Air Field	1994	<i>Naval Air Station, Lemoore California, SIVE, Naval Facilities Engineering Service Center</i> EPA 542-K-94-009 (p 17)	Berkeley Environmental Restoration Kent Udell 510-653-9477, OHM, Inc.	NFESC	
Subsurface Volatilization & Ventilation System (SVVS)	X	X					BTEX, PCE, TCE	Electrovoice, Inc., Buchanan, MI	1994	<i>Brown & Root Environmental Subsurface Volatilization & Ventilation System (SVVS)</i> EPA 540-R-94-529	Brown & Root Holt, MI Steven Thompson 517-694-6200	USEPA-NRMRL	
Surfactant Enhanced Aquifer Remediation (SEAR)		X					Fuel Oil	Naval Facility Pearl Harbor, HI	1999	Surfactant Flushing [An EPA SITE Program document will be produced.]	Duke Engineering EPA NRMRL Thomas Holdsworth 513-569-7675	USEPA-NRMRL	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
Surfactant Enhanced Aquifer Remediation (SEAR)	X						DNAPLs	Tinker AFB	1997	Surfactant Enhanced Aquifer Remediation (SEAR) of DNAPL Contamination: Micellar Enhanced Ultra Filtration (MEUF) www.envnet.org/envnet/scfa/tech/dnapl/factsheets/decontam.htm	Surbec Environmental Services Norman, OK 405-364-9726 MSE - Technology Applications, Inc. Thomas M. Malloy, PI 406-494-7202 tmmalloy@buttenet.com	USDOE/USAF/ University of Oklahoma/ Institute for Applied Surfactant Research	
Surfactant Enhanced Aquifer Remediation (SEAR-NB)	X						DNAPLs	Hill AFB	1996	Surfactant-Enhanced Aquifer Remediation: Field Demonstration of Surfactant-Enhanced Aquifer Remediation of PCE at Neutral Buoyancy [fact sheet]	INEEL/LMITCO Idaho Falls, ID Michael Shook 208-526-6945 Intera Inc. & Duke Engineering Services, Inc. Austin, TX Dr. Richard Jackson 512-425-2017	USDOE	
Surfactant Enhanced Aquifer Remediation (SEAR)	X						PCE	Dry Cleaning Facility, Marine Corps Base Camp Lejeune, NC	1998	Surfactant-Enhanced Aquifer Remediation (SEAR) [fact sheet] www.nfesc.navy.mil/enviro/ps/sear/sear.htm	NFESC Information: help@nfesc.navy.mil	ESTCP/NFESC/ USEPA-NRMRL/ University of Texas/ University of Oklahoma	
Surfactant/Foam Injection	X						TCE	Hill AFB, UT	1997	Surfactant/Foam Process for Aquifer Remediation AATDF TR-98-1; TR-98-6	Rice University Dr. George Hirasaki 713-285-5416 gjh@rice.edu	AATDF	

Technology	VOC-Halogenated	VOC-Nonhalogenated	SVOC-Halogenated	SVOC-Nonhalogenated	Inorganic Compounds	Explosives/Propellants	Technical Comments	Site or Waste Source Type	Demonstration Date	Project Report Title Reference Number (Page Number)	Contact	Sponsor	EPA REACH IT
GROUNDWATER DEMONSTRATION PROJECTS													
<i>In Situ Physical/Chemical</i>													
UVB -Vacuum Vaporizing	X						TCE, DCE	Airfield	1994	Roy F. Weston, Inc./IEG Technologies: UVB - Vacuum Vaporizing Well EPA 540-R-94-526	Roy F. Weston, Inc. 6400 Canoga Ave., Suite 100 Woodland Hills, CA 91367 818-596-6900	USEPA-NRMRL	X
UVB Vacuum Vaporizing Well	X						TCE	March Air Force Base Site	1994	Unterdruck-Verdampfer-Brunner Technology (UVB) Vacuum Vaporizing Well EPA 540-R-95-500	Roy F. Weston, Inc. Woodland Hills, CA Jeff Bannon 818-971-4900	USEPA-NRMRL	X
Vapor Extraction	X	X					VOCs, Volatile Fuel	NAS Seal Beach	1991	Ground Water Vapor Recovery System EPA 542-B-93-009 (p 119)	Remediation Service International P.O. Box 1601 Oxnard, CA 93032 805-644-5892	NFESC	



Appendix A: Innovative Remediation Technology Demonstration Programs

Table of Contents: Appendix

Environment Canada -----	A-1
Environmental Technology Verification -----	A-1
Canadian Environmental Technology Advancement Centres -----	A-1
California Environmental Protection Agency -----	A-2
California Environmental Technology Verification Program -----	A-2
U.S. Department of Defense -----	A-3
Air Force Center for Environmental Excellence -----	A-3
Environmental Security Technology Certification Program -----	A-3
National Environmental Technology Test Sites (NETTS) Program -----	A-4
Naval Environmental Leadership Program -----	A-6
Strategic Environmental Research and Development Program -----	A-6
Unexploded Ordnance Technology Demonstration Program -----	A-7
U.S. Army Environmental Center -----	A-8
U.S. Department of Energy -----	A-8
Industry and University Programs Area -----	A-8
Program Research and Development Announcements -----	A-9
TechCon -----	A-9
Technology Development Initiative -----	A-10
U.S. Environmental Protection Agency -----	A-11
Environmental Technology Verification Program -----	A-11
Remediation Technologies Development Forum -----	A-11
Superfund Innovative Technology Evaluation (SITE) Program -----	A-12

INNOVATIVE REMEDiation TECHNOLOGY DEMONSTRATION PROGRAMS

The following federal and state government organizations have sponsored or conducted innovative technology demonstration projects.

Environment Canada

Environment Canada supports innovative remediation technology demonstration and development through the following programs:

Environmental Technology Verification

Environment Canada's Environmental Technology Verification (ETV) Program is designed to foster the growth and marketability of Canada's environment industry, by providing validation and independent verification of performance claims. A key component of the Program is that it will give companies a Government of Canada "Certificate of Authenticity" enabling innovative environmental technologies to access markets more effectively.

Environment Canada and California EPA have signed an agreement to facilitate the exchange of information and reciprocity on their respective verification programs. As well, Canada and the U.S. EPA have a Cooperative Agreement in place to examine the harmonization of verification initiatives.

Environment Canada and Industry Canada have awarded a contract to ETV Canada Inc., a private sector company, to deliver the ETV Program. The company is owned by TerraChoice Environmental Services Inc. (which delivers the Environmental Choice Program) and the Ontario Centre for Environmental Technology Advancement (OCETA), which also represents Enviro-Access and CETAC-West (see below). An extensive cross-Canada network of environmental organizations, qualified to serve as Verification Entities, will be subcontracted to provide verification services.

For More Information

ETV Canada Inc.
300-2197 Riverside Drive
Ottawa, ON K1H 7X3 Canada
Telephone: 613-247-1900
Fax: 613-247-2228

Canadian Environmental Technology Advancement Centres

Environment Canada sponsors three Canadian Environmental Technology Advancement Centres (CETACs), in partnership with provincial governments, environmental industry associations, and the private sector. The CETACs are private sector, not-for-profit corporations, operating at arm's length from government. Each Centre's goal is to help small and medium sized enterprises (SMEs) commercialize environmental technologies by providing comprehensive technical services, access to investment capital, business counseling, and regulatory and market analysis.

The three CETACs are:

Enviro-Access Inc.
855, rue Pepin, Office 310
Sherbrooke, Quebec J1L 2P8
Tel. (819) 823-2230
Fax: (819) 823-6632

The Ontario Centre for Environmental Technology Advancement (OCETA) Inc.

63 Polson Avenue
Toronto, Ontario M5A 1A4
Tel. (416) 778-5264
Fax: (416) 778-5624

The Canadian Environmental Technology Advancement Centre - West (CETAC - WEST)

Alberta Regional Office Suite 420,
715 5th Avenue SW
Calgary, Alberta T2P 2X6
Tel. (403) 777-9595
Fax: (403) 777-9599

CETAC Sponsor:

Environment Canada
Technology Transfer Office
Environmental Technology Advancement Directorate
Environment Canada
351 St. Joseph Blvd., 18th Floor
Hull, Quebec K1A 0H3
Tel: (819) 953-5669
Fax: (819) 953-9029

California Environmental Protection Agency

California Environmental Technology Certification Program

The California Environmental Technology Certification Program is a voluntary program that provides participating technology developers, manufacturers, and vendors an independent, recognized third-party evaluation of the performance of new and mature environmental technologies. Developers and manufacturers define quantitative performance claims for their technologies and provide supporting documentation; Cal/EPA reviews that information and, where necessary, conducts additional testing to verify the claims. The technologies, equipment, and products that are proven to work as claimed receive official state certification. The certification program is voluntary and self-supporting. Companies participating in the program pay the costs of evaluating and certifying their technologies. For more information, please contact Tam Doduc (phone: 916-327-5789; email: tdoduc@arb.ca.gov).

U.S. Department of Defense

Air Force Center for Environmental Excellence

The Air Force Center for Environmental Excellence (AFCEE) has an Innovative Technology Program that identifies and field tests innovative site characterization, remediation, and pollution prevention technologies, with an emphasis on technologies that save time and money and facilitate compliance with air, soil, and water regulations.

Special areas of interest within the Innovative Technology Program include:

- remediation technologies that treat fuels, chlorinated solvents, pesticides, PCBs, and heavy metals;
- vapor phase capture and treatment;
- cost effective site characterization;
- stripping and removal of protective coatings;
- parts cleaning and degreasing; and
- industrial process sludge treatment.

Successful projects have been based on sound scientific principles and offer widespread applicability to Air Force sites and significant cost savings.

Contact: Mary Urey
Air Force Center for Environmental Excellence (AFCEE)
Technology Transfer Division
8001 Arnold Drive
Brooks AFB, TX 78235-5357
210-536-4419

Website: www.afcee.brooks.af.mil

Environmental Security Technology Certification Program

ESTCP's goal is to demonstrate and validate promising, innovative technologies that target the Department of Defense's (DoD's) most urgent environmental needs. These technologies provide a return on investment through cost savings and improved efficiency. ESTCP's strategy is to select lab-proven technologies with broad DoD and market application. These projects are aggressively moved to the field for rigorous trials that document their cost, performance, and market potential. To ensure that the demonstrated technologies have a real impact, ESTCP incorporates these players in the development and execution of each technology. ESTCP demonstrations—

- Address real DoD environmental needs.
- Significantly reduce costs and risks and expedite implementation.
- Document and validate the cost and performance of new technologies for DoD end-users and the regulatory community.

The ESTCP Process (below) ensures approved technologies meet DoD environmental challenges:

- DoD environmental requirements are specified.
- ESTCP requests proposals.
- Rigorous and expert scientific reviews are made.
- ESTCP projects are selected in cleanup, compliance, and pollution prevention.
- Technologies are demonstrated and evaluated at DoD sites.
- Cost and performance data are validated.
- Effective and affordable technologies are transferred across DoD.

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Director, ESTCP
901 N. Stuart Street, Suite 303
Arlington, VA 22203
(703) 696-2120
E-MAIL: marqusj@acq.osd.mil

Website: www.estcp.org

National Environmental Technology Test Sites (NETTS) Program

The National Environmental Technology Test Sites (NETTS) Program, sponsored by SERDP, is an environmental technology testing and evaluation program that provides locations, facilities, and support for applied research demonstration, and evaluation of innovative cleanup and characterization technologies that are candidates for Installation Restoration efforts at DoD facilities. NETTS, which is managed under the SERDP Cleanup Program, promotes technology transfer from research to proof-of-principle demonstration and facilitates expeditious transfer of technologies between government agencies and the private sector.

There are currently four DoD SERDP NETTS Test Sites and one NETTS technology support center which primarily focus on the proof-of-principle demonstrations of cleanup technologies. They consist of:

Dover NETTS Test Site: The Dover National Test Site (DNTS) at Dover AFB provides sites

where research can be conducted on the transport, detection, monitoring, and cleanup of solvent and fuel contaminants in the subsurface. DNTS provides a unique opportunity for conducting experimental, contained releases of dense nonaqueous phase liquids (DNAPLs). DNTS also provides other well-characterized contaminated plume sites and support services.

McClellan NETTS Test Site: The Air Force also manages a Chlorinated Hydrocarbon Remedial Demonstration Site at McClellan AFB, which provides areas to evaluate investigative technologies and remediation technologies for chlorinated hydrocarbons contamination in soil and groundwater.

Naval Facilities Engineering Service Center NETTS Test Site: The Environmental Technology Demonstration Site at Port Hueneme, California, provides *in situ* and *ex situ* locations to demonstrate advanced fuel hydrocarbon remediation technologies for treatment of Navy specific fuels contamination in soil and groundwater. Areas include a soil stockpile facility contaminated with fuels; an 11-acre gasoline station plume; and underground storage tank and spill areas.

Former Wurtsmith AFB NETTS Test Site: The National Center for Integrated Bioremediation Research and Development at Wurtsmith AFB, Michigan, co-sponsored by EPA and the university of Michigan, operates a controlled field test-bed facility for investigations to support the design and engineering of integrated bioremediation systems. This project focuses on *in situ* bioremediation of soils, surface water, and groundwater contaminated by fuels, solvents and other organic substances.

EPA NETTS Technical Support Center: EPA also co-sponsors the Environmental Technology Verification program's Site Characterization and Monitoring Technology pilot, established by the National Exposure Research Laboratory/Characterization Research Division, Las Vegas, Nevada, which identifies, demonstrates, evaluates, verifies, and transfers data about innovative monitoring, measurement, and site characterization technologies. Planning assistance is offered to developers to ensure verified data collection and to extend the application of new technologies to other sites.

Contact: NETTS Principal Investigator:
Mr. Jack Robertson
HydroGeoLogic, Inc.
1155 Herndon Parkway, Suite 900
Herndon, VA 22070
(703) 736-4560
E-MAIL: jbr@hgl.com

Individual Test Locations:

Air Force:

Dover National Test Site
Mr. Steve Farrington
Air Force Research Laboratory
P.O. Box 02063
909 Arnold Drive Extension
Dover AFB, DE 19902-6600
PHONE: (302) 677-4100

Air Force:

Mr. Tim Chapman
SM-ALC/EMR
5050 Dudley Blvd, Suite 3
McClellan AFB, CA 95652-1389
PHONE: (916) 643-0830, ext. 412

Navy:

Mr. Ernest Lory
Naval Facilities Engineering Service Center
ESC 411
560 Center Drive
Port Hueneme, CA 93043
PHONE: (805) 982-1299

EPA:

Site Characterization Technologies
Eric Koglin
U.S. EPA NERL, CRD-LV
P.O. Box 93478
Las Vegas, NV 89193-2478
(702) 798-2432

EPA:

In-situ Bioremediation Technologies
Dr. Michael J. Barcelona
Department of Civil and Environmental Engineering
IST Building — 1221
University of Michigan, North Campus
2200 Bonisteel Boulevard
Ann Arbor, MI 48109-2099
PHONE: (313) 763-6512

Website: www.serdp.com/netts

Naval Environmental Leadership Program

The Naval Environmental Leadership Program (NELP) seeks to expedite cleanup and compliance at two Naval installations (Naval Air Station North Island, San Diego, California, and Naval Station Mayport, Jacksonville, Florida) using innovative technologies and focused management. The two NELP bases serve as prototypes for identification, development, testing, implementation, evaluation, and refinement of new initiatives and export of successful applications for implementation as part of the Navy's Environmental Management Program.

Interested public or private sector parties in possession of innovative technologies that may be implemented at full-scale to address environmental problems at the two NELP bases and that address problems of concern in the Navy-wide environmental management program may be eligible to participate in NELP. Innovative technologies are selected and included in the Program through a variety of mechanisms. The NELP Initiative solicits proposals for innovative technologies via the *Commerce Business Daily*.

NELP emphasizes full-scale technology implementation to solve an environmental problem at one of the NELP bases. It is not an R&D program; however, the NELP Initiative may serve as a host for technology demonstrations if the developer requires a demonstration site, once the NELP bases meets the requirements for a successful demonstration, and funding is provided by the developer or other source. Successful demonstrations will lead to full-scale implementation at the NELP base and within the execution of the Navy's Installation Restoration Program.

Contact: Naval Facilities Engineering Command
Washington Navy Yard
Building 33
901 M Street SE
Washington, DC 20374

Website: www.nasni.navy.mil/nelp/

Strategic Environmental Research and Development Program

The Strategic Environmental Research and Development Program (SERDP) is a multiagency pro-

gram funded through the Department of Defense. SERDP responds to environmental needs of DoD, along with those it shares with the Department of Energy, the Environmental Protection Agency, and other federal government agencies.

SERDP seeks to identify, develop, demonstrate, and transition technology for four thrust areas. The four thrust areas correspond to the four pillars of DoD's Environmental Quality Program: environmental cleanup technology is one of the thrust areas. Specific objectives of the cleanup technology thrust area focus on conducting research and development to achieve more effective and efficient environmental characterization, assessment, monitoring, and cleanup of soil, sediment, groundwater, surface water, and structures contaminated by past defense practices with hazardous materials (including unexploded ordnance), and toxic substances. The cleanup technology area also seeks to:

- develop cost-effective methods to determine fate, transport, and effects of contaminants related to defense activities;
- develop risk-based modeling methods for establishing cleanup priorities; and
- facilitate transfer of technology to field use by means of the proof-of-principle demonstration of R&D projects, particularly, at the SERDP National Environmental Technology Test Sites.

On an annual basis, SERDP solicits proposals from the federal and private sector in the areas of site characterization, monitoring, remediation, and risk assessment. Each year specific statements of needs are issued. For current topics of interest and information on how to become involved, please see the SERDP web site.

Contact: Dr. Femi A. Ayorinde
SERDP Program Office
901 N. Stuart Street, Suite 303
Arlington, VA 22203
(703) 696-2118
E-MAIL: ayorinf@acq.osd.mil

Website: www.serdp.com

Unexploded Ordnance Technology Demonstration Program

JPG Phases I, II, III and Live Site Projects

The Congressionally funded Unexploded Ordnance (UXO) Technology Demonstration Program has established technology performance baselines by demonstrating and highlighting the strengths and capabilities of numerous UXO technologies. The U.S. Army Environmental Center (USAEC), in partnership with the Naval Explosive Ordnance Disposal Technology Division, has conducted over 60 demonstrations of UXO characterization and remediation technology. Phase I, Phase II and Phase III were conducted in 1994, 1995 and 1996 at the U.S. Army Jefferson Proving Ground in Madison, IN. These demonstrations were performed on a controlled test site containing a known baseline of emplaced, inert ordnance.

The UXO Technology Demonstration Program has highlighted the capabilities and limitations of UXO technologies. Demonstrators show continued improvement in detection performance. But because there has been no substantial improvement in the ability to discriminate UXO from the clutter, focused efforts are needed. The Phase IV effort, currently underway, will capitalize upon the previous UXO technological investments by focusing on target discrimination and reduction of false alarms rates. This will provide the government with economical and effective technology that will significantly reduce the overall cost of UXO clearance, by reducing the number of anomalies which must be found.

Contact: U.S. Army Environmental Hotline
(800) USA-3845, DSN 585-1699

Website: aec-www.apgea.army.mil:8080/prod/usaec/et/uxo/jpgfs.htm

U.S. Army Environmental Center

The Environmental Technology Transfer and Technology Demonstration Branches within the Pollution Prevention and Environmental Technology Division (P2&ETD) develop, demonstrate, and deliver tools to help the Army sustain readiness, protect resources, and improve soldiers' quality of

life. These programs enable the Army to test and implement cost-effective technologies in pollution prevention, conservation, compliance, and restoration. From cleanup devices to better ways of doing business, these innovations protect the environment while supporting military operations, installation management, and material development.

P2&ETD assesses Army environmental needs and works with researchers and future users to adapt ideas. P2&ETD searches government labs or finds "off the shelf" commercial tools with potential military application. P2&ETD produces "real world" cost and performance data by testing lab-proven technologies in field demonstrations. P2&ETD helps transfer successful products to the Army community, tracking technology performance and user needs even after the demonstration.

P2&ETD's guidance and technical support programs address the main elements of the Army's environmental program, meeting specific user needs on pollution prevention, conservation, compliance, and restoration, as well as specialized programs in SCAPS, UXO, and Range XXI.

Contact: Mr. James I. Arnold, Jr.
.S. Army Environmental Center
Attn: SFIM-AEC-ET (Arnold)
APG, MD, 21010-5401
Fax: 410-612-6836

Website: aec-www.apgea.army.mil:8080/prod/aechome.htm

U.S. Department of Energy

Industry and University Programs Area

The mission of the Industry and University Programs Area is to identify and provide development support for technologies that show promise in addressing DOE's Environmental Management needs, but require proof-of-principle experimentation and already proven technologies in other fields that require critical path experimentation to demonstrate feasibility for adaptation to specific EM needs.

Contact: Jeffrey Walker
U.S. Department of Energy
19901 Germantown Road
Germantown, MD 20874-1290
301-903-7966
301-903-7457 fax

Program Research & Development Announcements/ Research Opportunity Announcements

Program R&D Announcements (PRDAs) and Research Opportunity Announcements (ROAs) are DOE's major assistance vehicles for developing technologies. PRDAs solicit a broad mix of proposals where R&D, including demonstration, testing, and evaluation, is required within broadly defined areas of interest. DOE may issue a PRDA in response to an individual program need such as the cleanup of a particular contaminant at a specific site. Multiple awards for proposals, which may have varied approaches or concepts, are generally made. Numerous PRDAs may be issued each year.

ROAs solicit industry and academic proposals throughout the year ("rolling admissions") for potential contracts in applied research. ROAs support research efforts for the development of technologies with potential application in the EM program. A proposed technology should improve DOE's capabilities in areas such as *in situ* remediation; detection, characterization, and monitoring; efficient separations technology for radioactive waste; and robotics. ROAs are published in the *Commerce Business Daily*. The program includes some set-asides for small businesses. DOE anticipates making 25-30 awards through an active ROA at its Morgantown facility.

For information on the full range of DOE/EM assistance programs, contact the EM Central Point of Contact (CPOC). The CPOC is a referral service that expedites and monitors private sector interaction with EM. The CPOC can identify links between technologies and program needs and connect potential partners with an extensive network of Headquarters and field program contacts.

Contact: EM Central Point of Contact
U.S. Department of Energy
19901 Germantown Road
Germantown, MD 20874-1290
800-845-2096
301-903-7238 fax

For information on ROA awards through the
Morgantown Energy Technology Center:

Contact: Thomas Martin
304-291-4087

TechCon

TechCon is a DOE program developed to increase the use of commercially available technologies at DOE cleanup sites with an emphasis on technologies that have shown superior performance characteristics. TechCon's mission is to identify, screen, and support the implementation of available environmental technologies from both the private and public sector in the U.S. as well as from international sources.

The TechCon Program works with sites to identify clean-up needs, finds commercially available technologies and services that have proven performance capabilities, matches technologies to needs at DOE sites, and delivers information on these technologies to site personnel. By connecting representatives of technology companies with those at remediation sites, TechCon promotes the use of available technologies and resolves barriers to their field application. A key to TechCon's success is improving communication among companies, site representatives, and regulators. To that end, TechCon has instituted an electronic mail discussion list that is hosted at ANL. With over 60 members, including DOE, EPA, site contractor, and technology company personnel, this e-mail list facilitates dissemination of information and can expedite the matching of technology needs with commercially available technologies.

Contacts: Dale Pflug
Argonne National Laboratory
9700 South Cass Avenue
Argonne, IL 60439
630-252-6682
630-252-6414 fax
dpflug@anl.gov

Duane Deonigi
Pacific Northwest Laboratory
P.O. Box 999
Mail Stop K8-04
Richland, WA 99352
509-372-4278
509-372-4394 fax

Website: www.ead.anl.gov/~techcon/index.html

Technology Development Initiative

DOE's Technology Deployment Initiative (TDI)
seeks to:

- achieve multiple deployments of cleanup technologies and processes that expedite DOE's environmental management effort,
- obtain third party validation of cost savings,
- facilitate the reinvestment of cost savings to increase participation in the program, and
- break down barriers to the implementation of new technologies.

Under TDI, technologies selected for participation and deployment support DOE's environmental management mission and provide for multiple applications. Applications include a Pricing Proposal that compares an estimated cost with that of a baseline technology; the technology should accelerate or reduce the cost of that referenced baseline, or both. Applications must also include a commitment from the proposing DOE site manager. TDI funding is for deployment of commercial-ready technologies, rather than demonstrations.

Ranking criteria for applicants are divided into four areas: impact/technical approach; business management approach; stakeholder/regulatory management approach; and cost. Incentives for developers to participate in TDI include the availability of funds to accelerate deployment and cleanup, increased visibility for the technologies through deployment and the generation of validated cost savings, multiple state acceptance of the technology, and the opportunity for reinvestment of cost savings.

Website: wastenot.inel.gov/tdi

U.S. Environmental Protection Agency

Environmental Technology Verification Program

Over the years, EPA has evaluated technologies to determine their effectiveness in preventing, controlling, and cleaning up pollution. EPA has expanded these efforts by instituting the Environmental Technology Verification (ETV) Program to verify the performance of a larger universe of innovative technical solutions to problems that threaten human health or the environment. ETV accelerates the entrance of new environmental technologies into the marketplace by supplying technology buyers and developers, consulting engineers, States, and EPA Regions with high quality data on the performance of new technologies.

EPA utilizes the expertise of partner "verification organizations" to design efficient processes for conducting performance tests of innovative technologies. EPA selects its partners from both the public and private sectors including Federal laboratories, States, universities, and private sector facilities. Verification organizations will oversee and report verification activities based on testing and quality assurance protocols developed with input from major stakeholders/customer groups associated with the technology area.

Verification under ETV means confirmation of the performance characteristics of a commercial-ready environmental technologies through the evaluation of objective and quality assured data. ETV's targeted customers are:

- Technology users and purchasers
- Technology enablers
 - permitters, regulators
 - consulting engineers
- Technology developers and vendors

Each pilot will announce its intention to begin accepting technologies for verification in the *Commerce Business Daily* and in the trade press.

Contact: Penelope Hansen
U.S. Environmental Protection Agency
TCS/NRMRL/ORD (8301)
401 M St., SW
Washington, DC 20460
202-260-2600

Website: www.epa.gov/etv/

Remediation Technologies Development Forum

The Remediation Technologies Development Forum (RTDF) was established in 1992 by EPA to identify ways of working together with industry to solve complex hazardous waste remediation problems. The RTDF is open to all interested parties and has grown to a consortium of partners from private industry, government agencies, and academia who share the common goal of developing more effective, less costly hazardous waste characterization and treatment technologies. RTDF partnerships undertake research, development, demonstration, testing, and evaluation efforts to achieve common cleanup goals.

The RTDF advances the development of cost-effective technologies for the remediation of hazardous wastes, and works to achieve these goals by:

- identifying priority remediation technology development needs;
- establishing and overseeing action teams to plan and implement collaborative research projects to address these needs; and
- addressing scientific, institutional, and regulatory barriers to innovative treatment technologies.

RTDF members establish self-managed action teams that bring members together to work on their highest priority problems. These teams define technology research needs, develop and implement research project plans, and produce and disseminate scientifically credible results to facilitate broad acceptance of the technology.

EPA facilitates the operation of the Action Teams and the RTDF Steering Committee, and contributes its research efforts to the jointly-led projects. EPA provides funding for RTDF research activities and Action Team meetings. Other federal agencies,

industry, and academic participants also provide funding, laboratory, and field support for Action Team projects. Participants in each Action Team provide funding and/or in-kind support for the Team's research efforts.

Contacts: Robert Olexsey

U.S. Environmental Protection Agency
26 West Martin Luther King Dr.
Cincinnati, OH 45268
513-569-7861

Dr. Walter W. Kovalick, Jr.
Technology Innovation Office (5102G)
U.S. Environmental Protection Agency
401 M Street, SW
Washington, DC 20460
703-603-9910

At the conclusion of a SITE demonstration, EPA prepares an Innovative Technology Evaluation Report, Technology Capsule, and Demonstration Bulletin. These reports evaluate all available information on the technology and analyze its overall applicability to other site characteristics, waste types, and waste matrices. Testing procedures, performance and cost data, and quality assurance and quality standards are also presented.

Contact: Annette Gatchette

U.S. Environmental Protection Agency
National Risk Management Research
Laboratory
26 W. Martin Luther King Drive
Cincinnati, OH 45268
513-569-7696

Website: www.rtdf.org

Superfund Innovative Technology Evaluation Program

The U.S. Environmental Protection Agency's (EPA) Superfund Innovative Technology Evaluation (SITE) Program was established by EPA's Office of Solid Waste and Emergency Response and the Office of Research and Development (ORD) in response to the 1986 Superfund Amendments and Reauthorization Act, which recognized a need for an "Alternative or Innovative Treatment Technology Research and Demonstration Program." The SITE Program is administered by ORD National Risk Management Research Laboratory in the Land Remediation and Pollution Control Division (LRPCD), headquartered in Cincinnati, Ohio. The SITE Demonstration Program encourages the development and implementation of (1) innovative treatment technologies for hazardous waste site remediation and (2) monitoring and measurement.

In the SITE Demonstration Program, the technology is field-tested on hazardous waste materials. Engineering and cost data are gathered on the innovative technology so that potential users can assess the technology's applicability to a particular site. Data collected during the field demonstration are used to assess the performance of the technology, the potential need for pre- and post-processing of the waste, applicable types of wastes and waste matrices, potential operating problems, and approximate capital and operating costs.



Appendix B: Categorized Overview of Demonstration Projects

Overview of Ex Situ Demonstrations -----

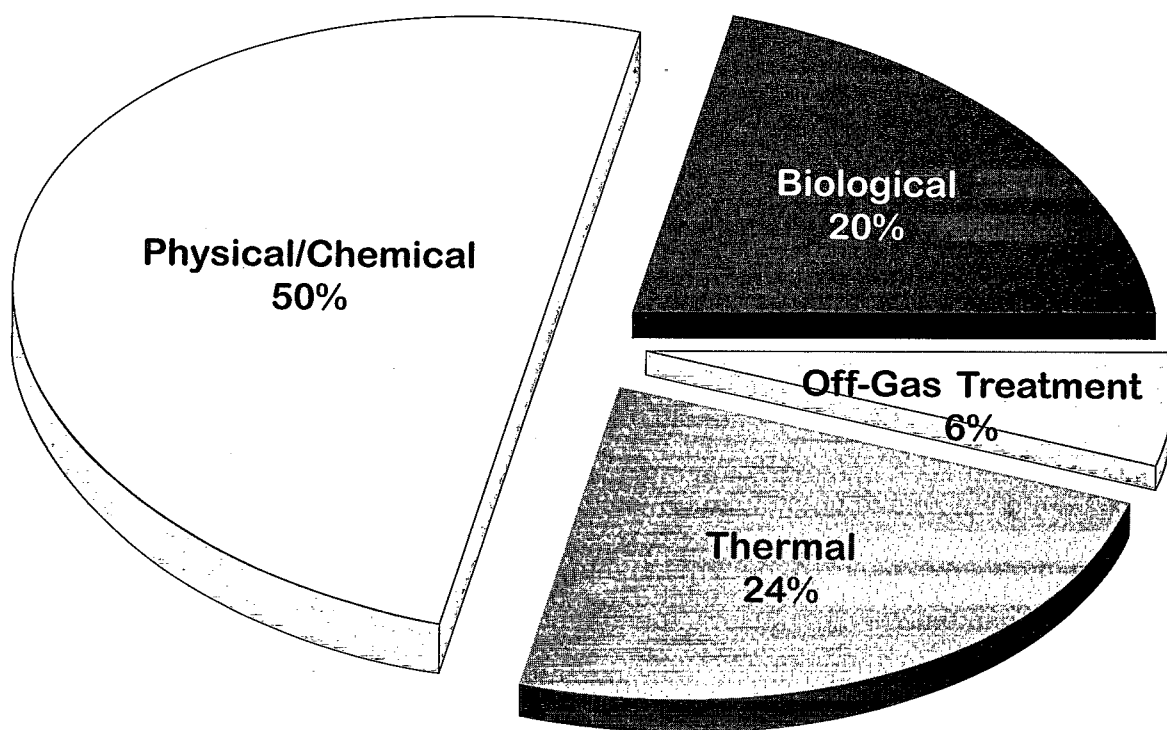
Overview of In Situ Demonstrations -----

Overview of Soil Demonstrations -----

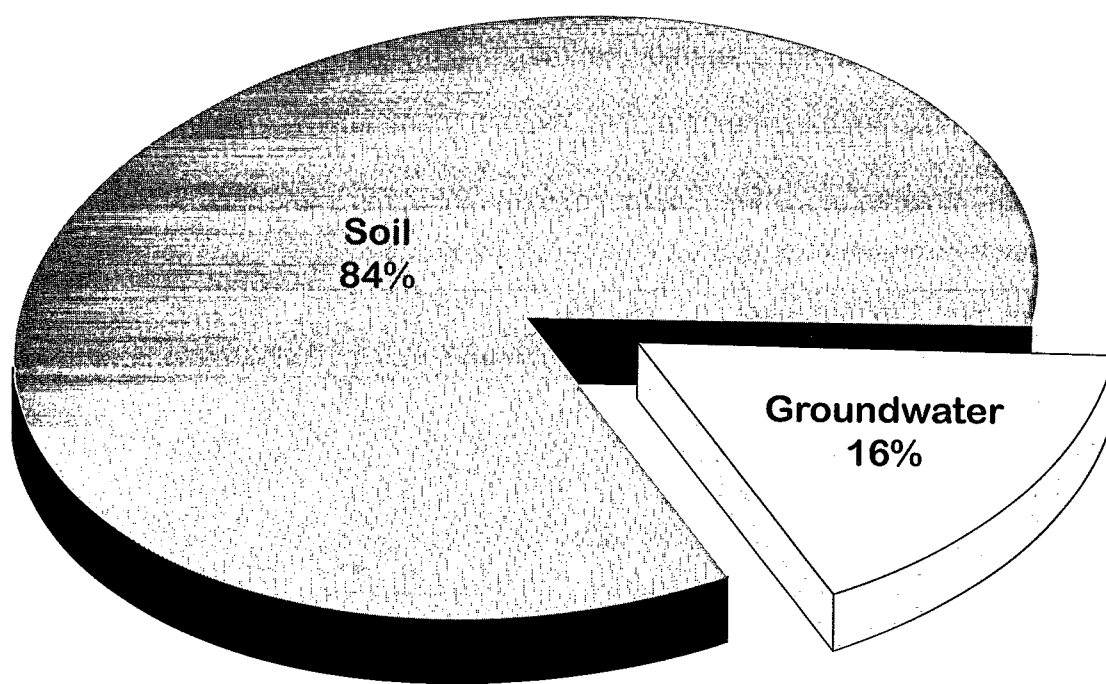
Overview of Groundwater Demonstrations -----

Overview of Contaminants -----

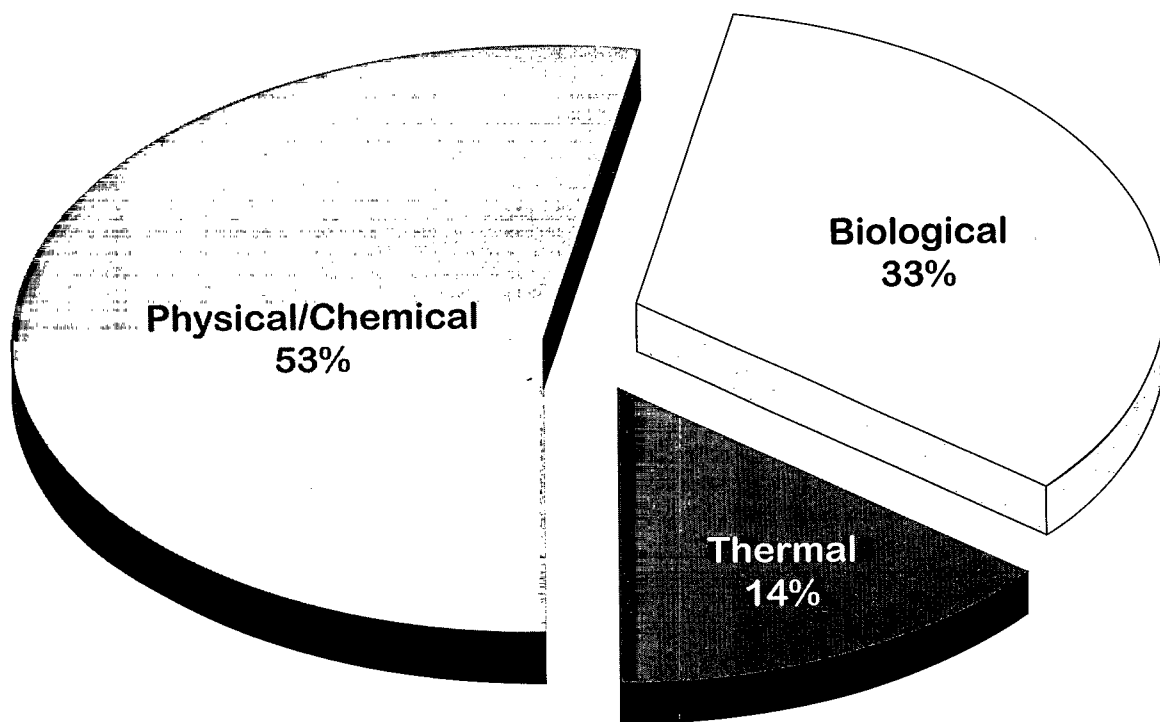
Overview of Ex Situ Demonstrations (218)



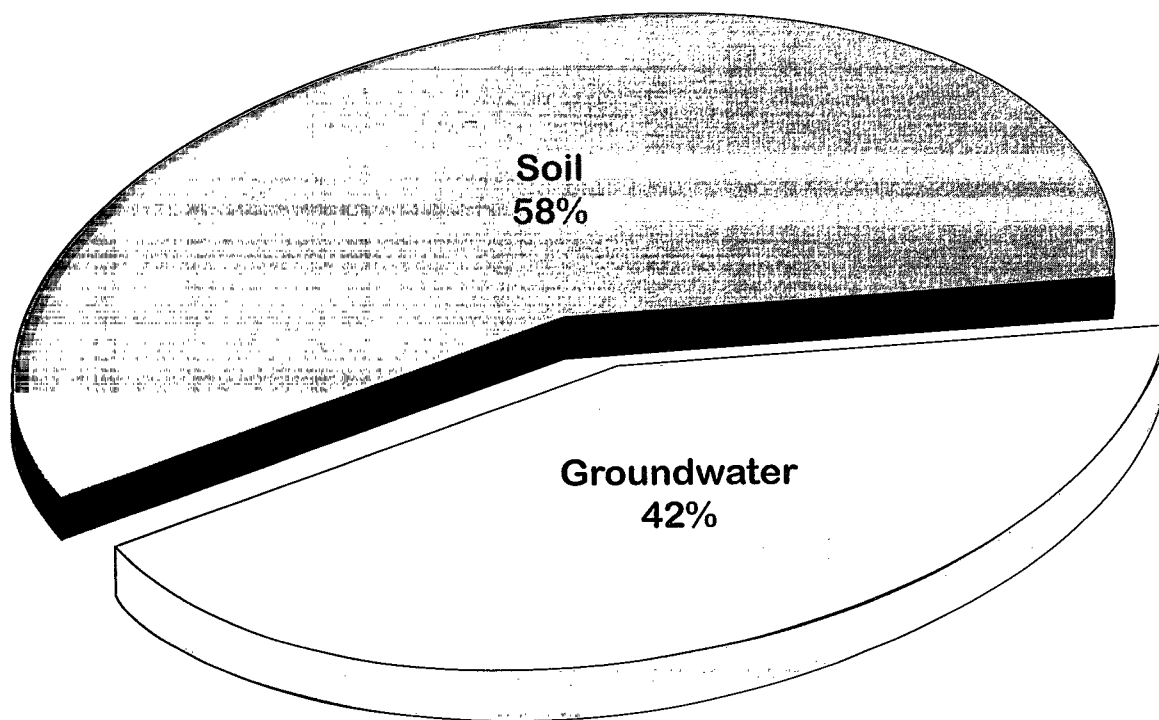
Ex Situ Demonstrations by Media



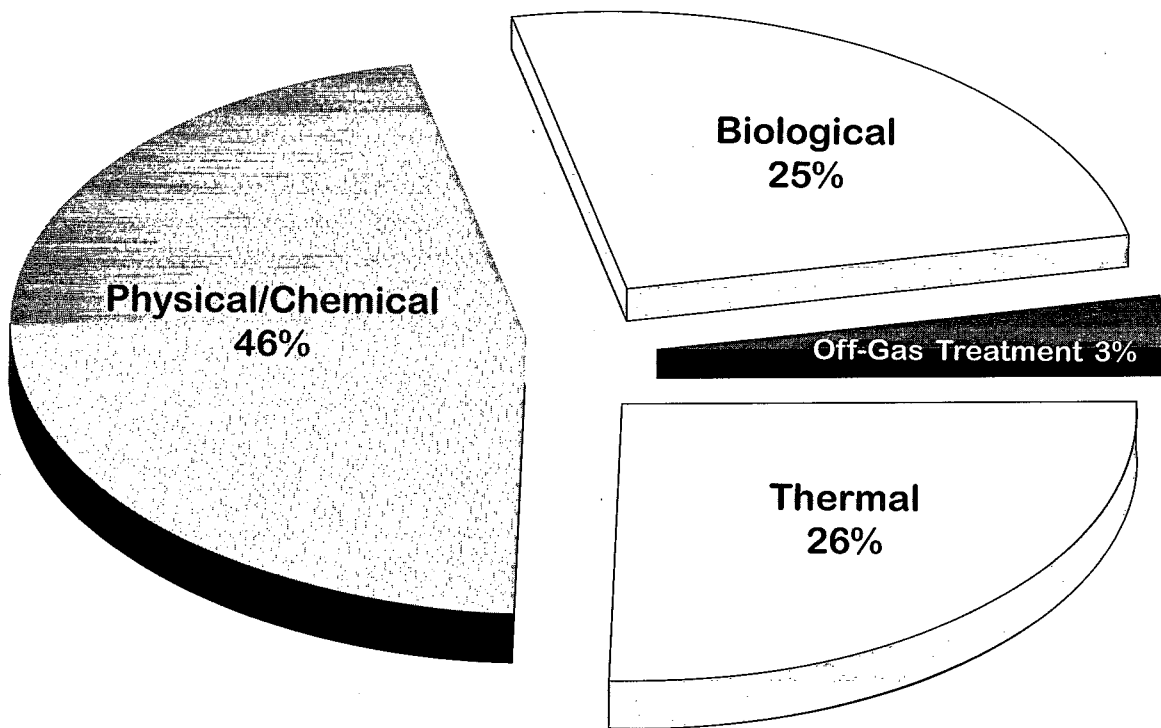
Overview of In Situ Demonstrations



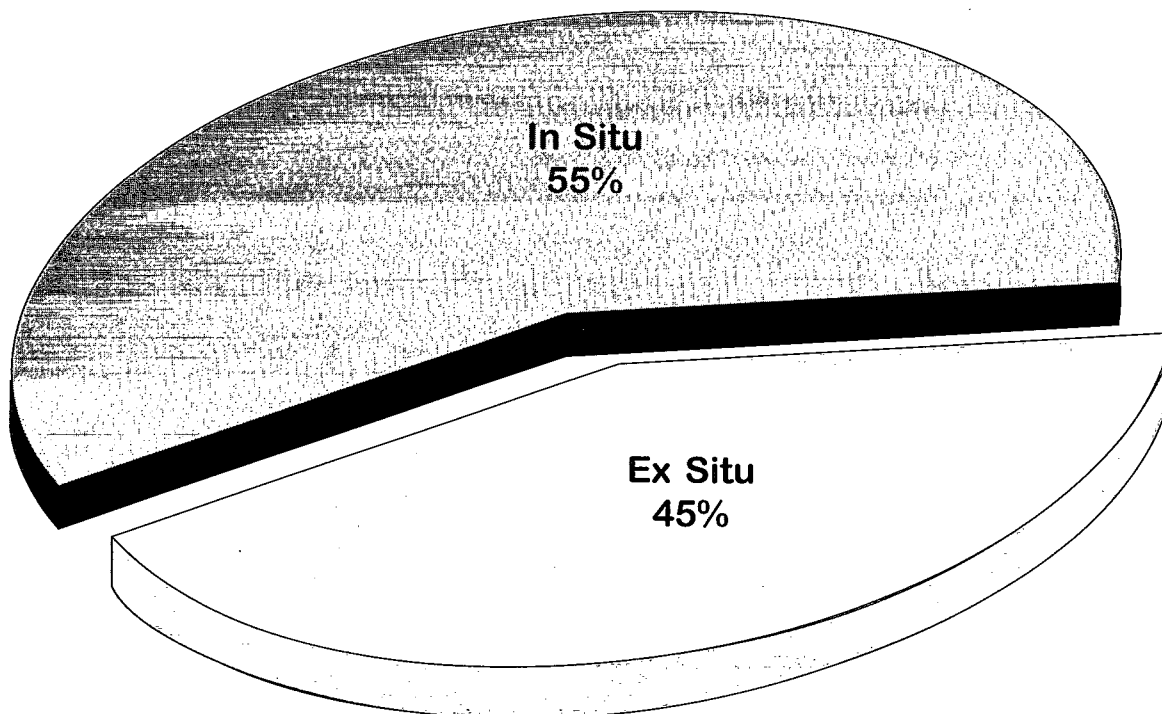
In Situ Demonstrations by Media



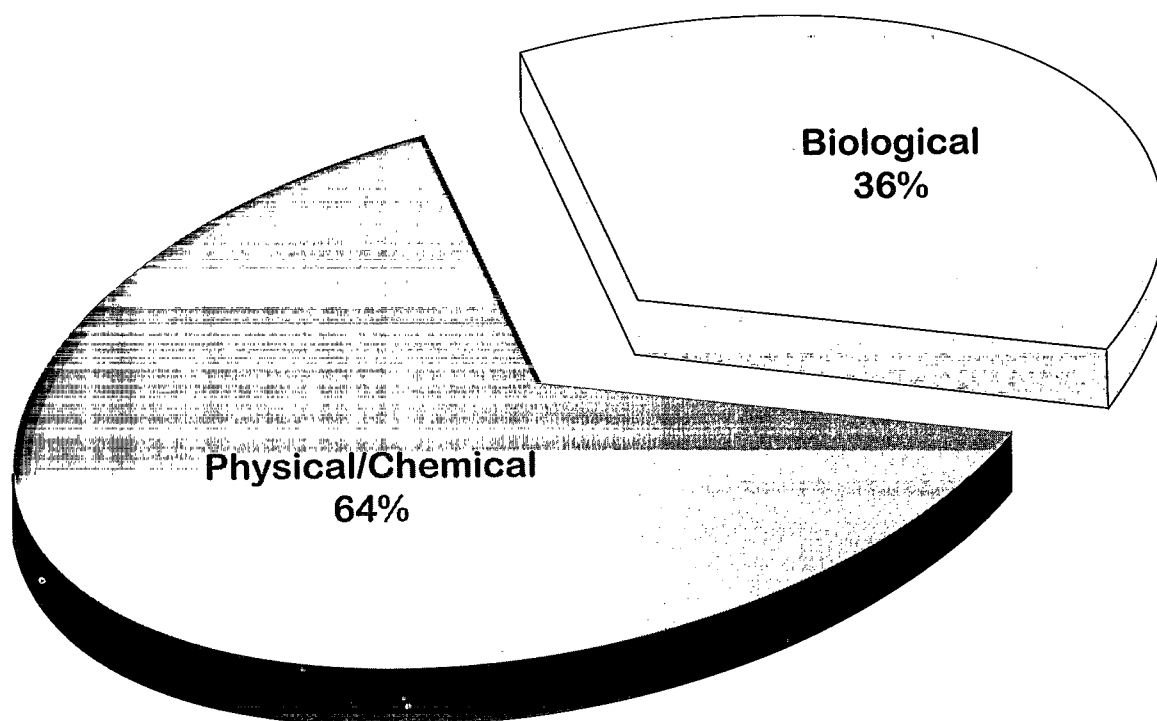
Overview of Soil Demonstrations (406)



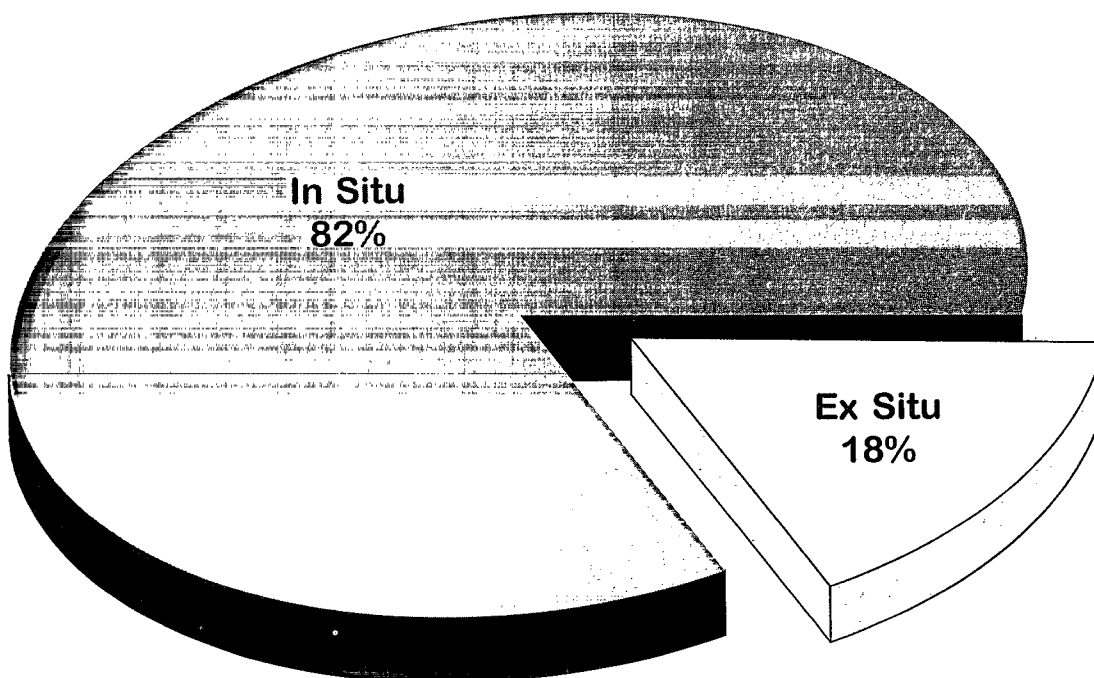
Soil Demonstrations: In Situ vs. Ex Situ



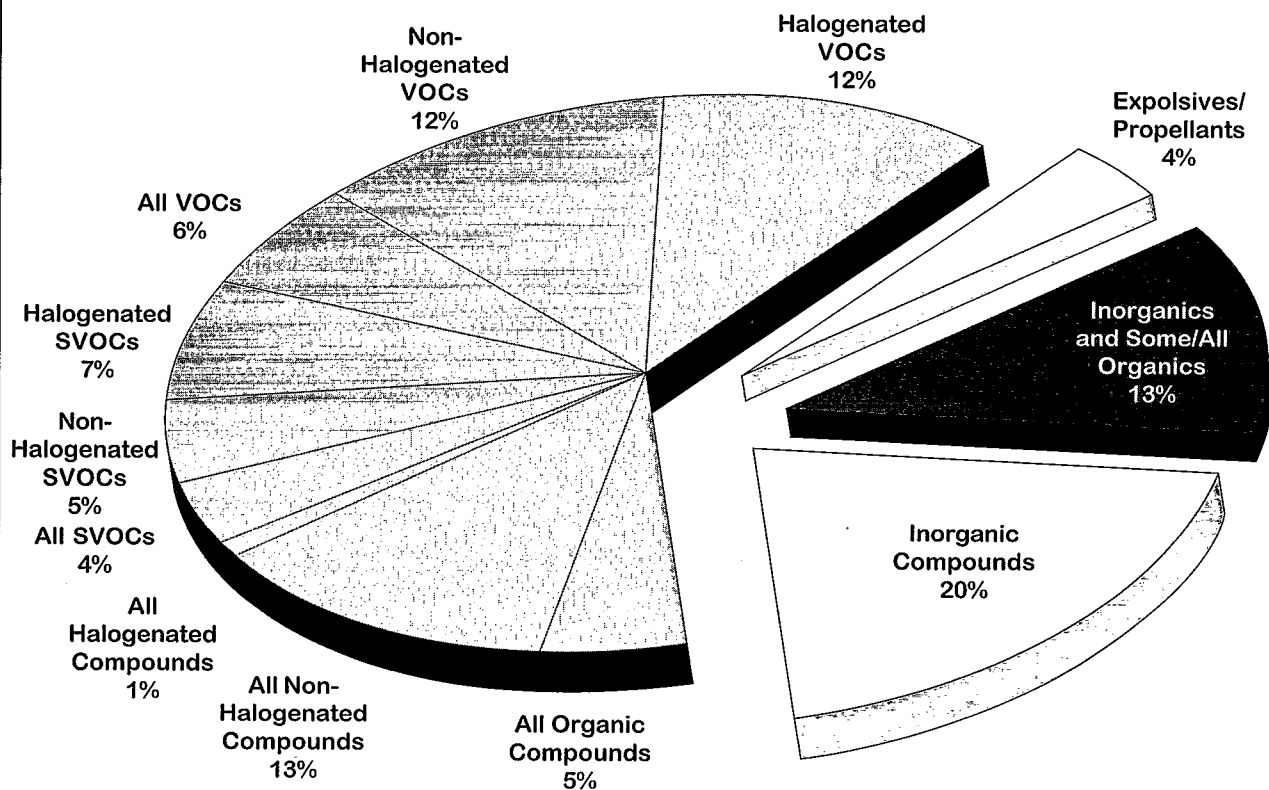
Groundwater Demonstrations (195)



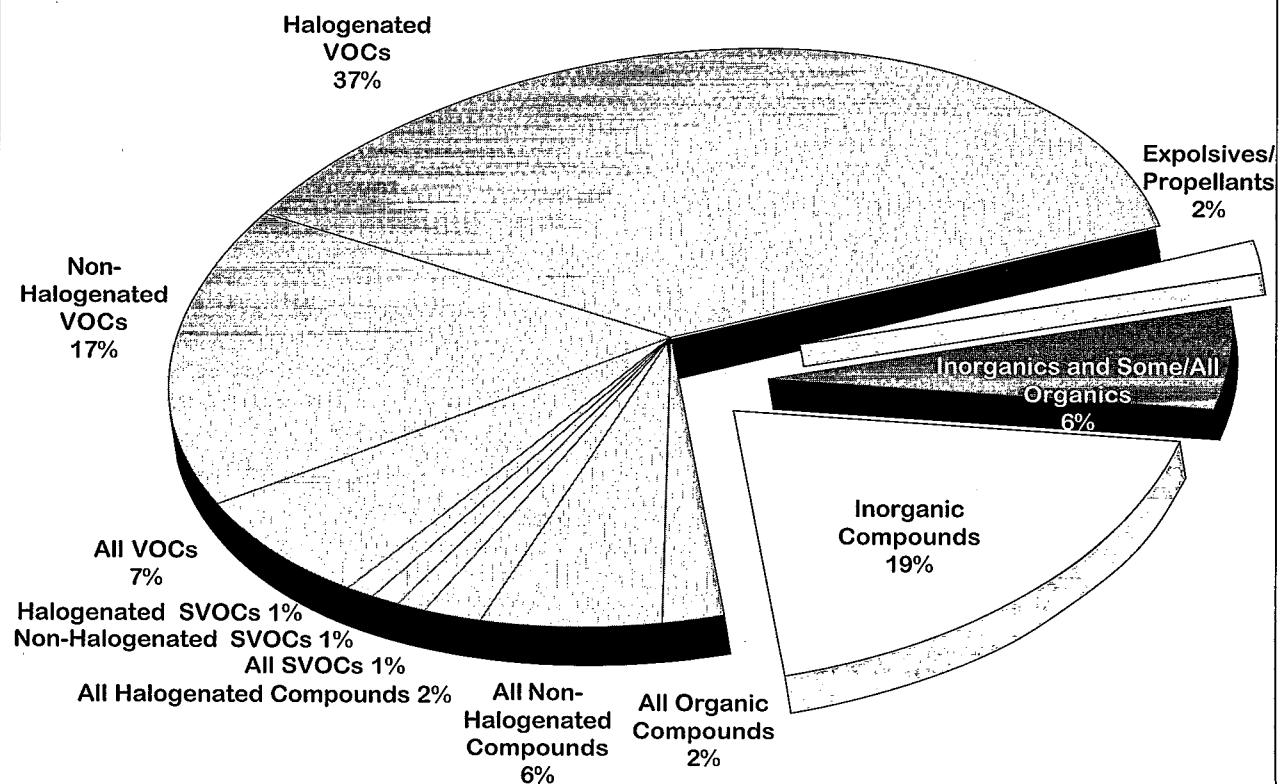
Groundwater Demonstrations: In Situ vs. Ex Situ



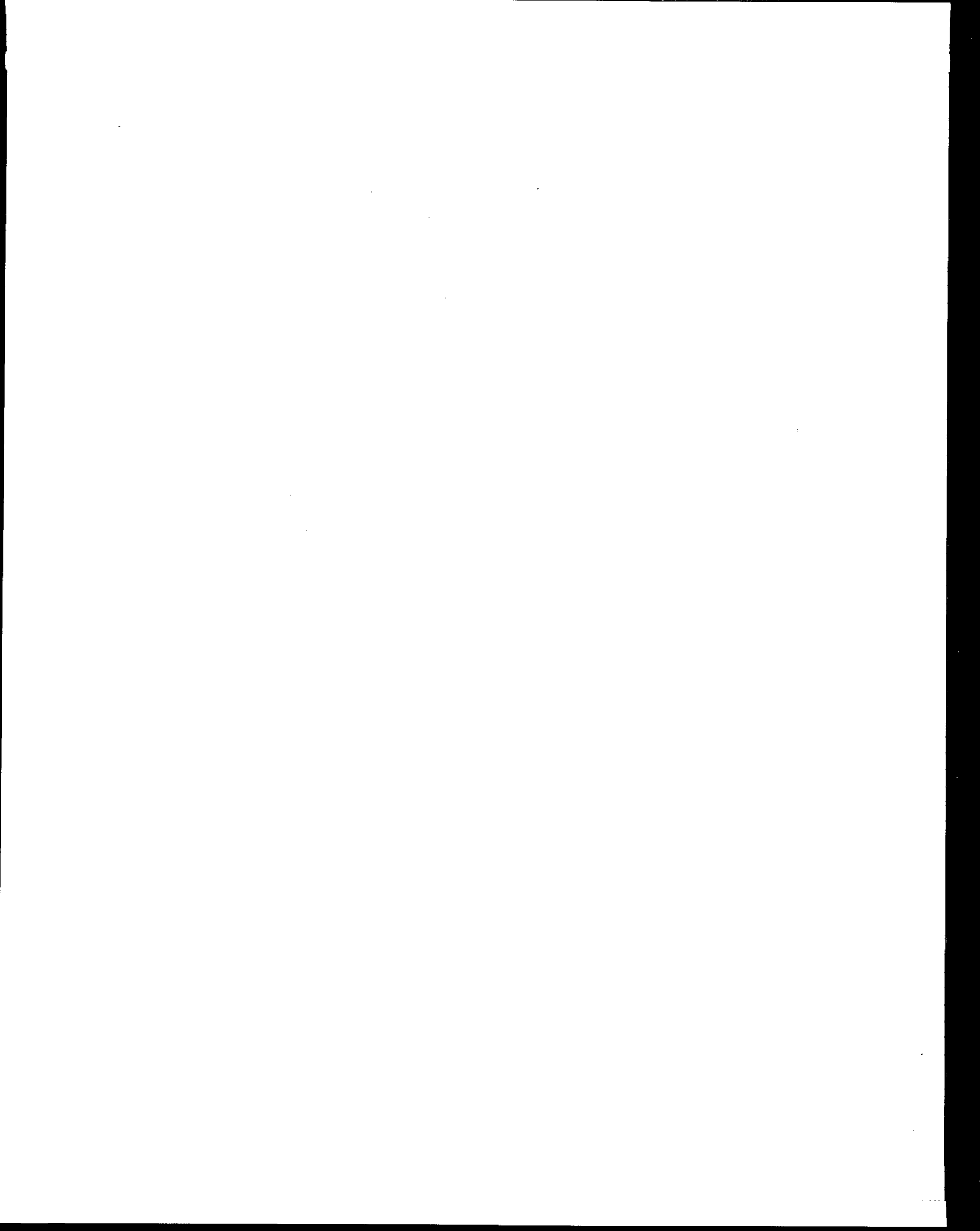
Contaminants: Soil Projects



Contaminants: Groundwater Projects









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